

# THE AMERICAN NEPTUNE

A QUARTERLY JOURNAL OF MARITIME HISTORY



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# THE AMERICAN NEPTUNE

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*of Maritime History*

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**B**EFORE the war it was the custom for the Editors and Advisory Board of the NEPTUNE to have a meeting about once a year, eat fish, drink rum, and decide on problems concerning the magazine. It was all very pleasant. But during the war we got out of the habit for people were busy and travel was uncertain and unreliable.

Now we have decided to resume editorial meetings. Some time about the middle of September (the date has yet to be set) there will be such a gathering. Various problems have arisen which must be settled and ideas have come up that will be discussed and decided upon. Occasionally over the past few years subscribers interested in the magazine and its welfare have sent in suggestions. Many of these have been helpful, and others, while good, have been impossible to use. There is, however, a time for all things and now is the time for subscribers who have such suggestions to submit them forthwith. If they are in my hands before 10 September they will be considered at the meeting. Any changes in policy or editorial customs will become effective with the January 1952 issue.

Over the years, with the obvious intent of keeping the interest of specialized groups and individuals, the editors have attempted to keep a reasonable balance between the various maritime subjects that come within our ken. Depending, as we do, upon free contributions it has not always been easy to find the right articles.

*It was the particular desire of the editors to publish, at least once a year, an article on some vessel or type of craft, with plans, large folding ones if possible, that would be useful to ship model builders. While we have material of this kind on hand it has not been possible to use any plans since those of the lightship Columbia River appeared in October 1949. And the reason, as everyone should know, is the tremendously increased costs of publication. The large folding plans are very expensive and, at the moment, beyond our pocketbook. This lack of plans has caused some of the model builder interests to give tongue. We should like, therefore, to point out that we could still use articles useful to model makers provided they were illustrated with line cuts that would go on a single page, but no such articles have been submitted. If all the model builders in the country subscribed and one in a hundred wrote accurate, well-illustrated articles there would be ample material and folding plans could once more be used as well.*

*In THE AMERICAN NEPTUNE for April 1949 we published an article by Richard LeBaron Bowen, Jr., on the dhows of southern Arabia. Considerable interest and speculation was aroused concerning the men who sailed the dhows and the cargoes they carried. So in this number Mr. Bowen writes of those men and the economy of one of the last great commercial sailing fleets of the world.*

*John Lyman has contributed an account of the missionary vessel Pitcairn operated by the Seventh-day Adventist Church which carries on another topic begun last October by Philip H. Cook who wrote on the missionary vessels operated among the islands of Polynesia and Micronesia by the American Board of Commissioners for Foreign Missions. This helps complete the story of these able little ships that have carried the word of God to the South Sea Islanders during the last century and a quarter.*

ERNEST S. DODGE

*Peabody Museum of Salem*





## The Dhow Sailor<sup>1</sup>

BY RICHARD LeBARON BOWEN, JR.

### I

SINCE time immemorial, cargo has been transported in sailing ships up and down the South Arabian and the East African coasts. As the medieval Sinbads and the ancients before them had done for countless centuries, so are the Arabs, Indians, and Persians today transporting cargo in sailing ships up and down these same shores. Today these sailors operate the last great fleet of deepwater sailing ships in the world, and because of the special circumstances, this fleet will probably sail on for many more centuries oblivious to the changing pace of life around it. Life for these modern sailors has changed little in the thousand years that have passed since the adventures of Sinbad the Sailor were recorded in *The Thousand and One Nights*.

The Arabs, Indians, and Persians are still able to sail their fleets of

<sup>1</sup> Credit for this article belongs in large part to Mr. Frederick Hunt, who, after reading the author's 'Arab Dhows of Eastern Arabia' in THE AMERICAN NEPTUNE, wrote to the Editor and asked if a follow-up might be possible, 'telling something of actual life aboard a dhow, how the crew lives, watches they stand, living conditions, what they eat, their wages, etc.' Mr. Hunt's outline has been followed almost to the letter, with some additional material added to round out the study.

Shortly after the first draft of the article was finished, the writer was very fortunate to become a member of the American Foundation for the Study of Man Arabian Expedition, which conducted archaeological investigations in South Arabia during the winter of 1950. Almost a month spent at Aden and on the south coast of Arabia, enabled the writer to collect much valuable additional first-hand data on the life of the dhow sailor. The writer is indebted to Mr. Wendell Phillips, leader of the expedition, for his assistance in making this particular phase of the study possible. The writer is deeply grateful to Prof. W. F. Albright, vice-president of the American Foundation for the Study of Man, for his guidance and assistance in numerous details in the work. The writer is also indebted to Dr. Philip K. Hitti for valuable advice on certain points.

In doing any work on the subject of dhows, one must consult what Alan Villiers has written on the subject. By sailing with the Arabs on their dhows for almost a full year Mr. Villiers has obtained an intimate picture of the dhow that the casual observer will completely miss, or the serious worker may not be able to get, as the Arabs are rather suspicious of Europeans who investigate their activities too closely. The writer of this present article has drawn on Villiers' material to round out certain aspects of this article and to supply various facts and figures for which Villiers alone is the source. Most of such material has been taken from his entertaining book, *Sons of Sinbad* (New York: Charles Scribner's Sons, 1940), which in further reference will be abbreviated to A. Villiers, SS.

A description of the various types of dhows mentioned by their Arabic names in this article will be found in R. LeB. Bowen, Jr., 'Arab Dhows of Eastern Arabia,' AMERICAN NEPTUNE, IX (1949), 87-132, and R. LeB. Bowen, Jr., *Arab Dhows of Eastern Arabia* (Rehoboth: Privately printed, 1949).

lateen-rigged dhows, which operate in the main without the aid of engines, partly because of the amazing predictability of the monsoon trade winds. For millenniums the northeast monsoon has started unfailingly about October and blown for six months, until the southwest monsoon set in about April and continued for the next six months. By a strange coincidence, these winds blow virtually parallel to the South Arabian and East African coasts. The Arabs ride their lateeners down from the north on one wind and return on the other. So convenient is the arrangement that it is probably one reason why the fair-weather lateen rig has persisted for so many centuries on the deepwater dhows in the waters of the Indian Ocean.

The *Periplus of the Erythraean Sea* (written by an anonymous Egyptian-Greek sailor in A.D. 50) tells us that the secret of the periodicity of the monsoons was discovered by Hippalus somewhat earlier and that 'from that time to the present day' ships bound for India from the Red Sea or South Arabia set a course 'straight out to sea.' It should be noted that Hippalus' find was a 'discovery' only from the Egyptian and the Greek point of view, as he discovered a secret that Indian and Arab mariners may have been carefully attempting to hide from Egyptian and Greek sailors. The original discovery of the fact that one could 'sail straight out to sea' and reach India from South Arabia, rather than by coasting, was more of a geographical than a meteorological discovery, for it was a realization of the southern projection of India (see Figure 1). Certainly no sailor in a sane mind would set a course 'straight out to sea' from South Arabia if he thought that the lands around the Erythraean Sea were oriented as shown in Figure 2.

The South Arabian kingdoms long maintained a monopoly of carrying the goods of the East via camel to the West. The Arabians collected the products of India and East Africa at the southern terminal of the famous incense route and sent these north, along with their own products, in huge camel caravans; the recipients in the north thought that all the products they received originated in South Arabia. Many writers have stated that the South Arabian kingdoms were doomed when the West discovered the secret of the periodicity of the monsoons. However, this writer feels that the monsoons had little to do with it; more important was the discovery that many of the coveted products thought to be indigenous to South Arabia actually originated in East Africa and India. After this fact was discovered, Greek and Roman shipping entered the Indian Ocean; in opening up trade with India and Africa they immediately started to slash the revenue of the South Arabians. It should be

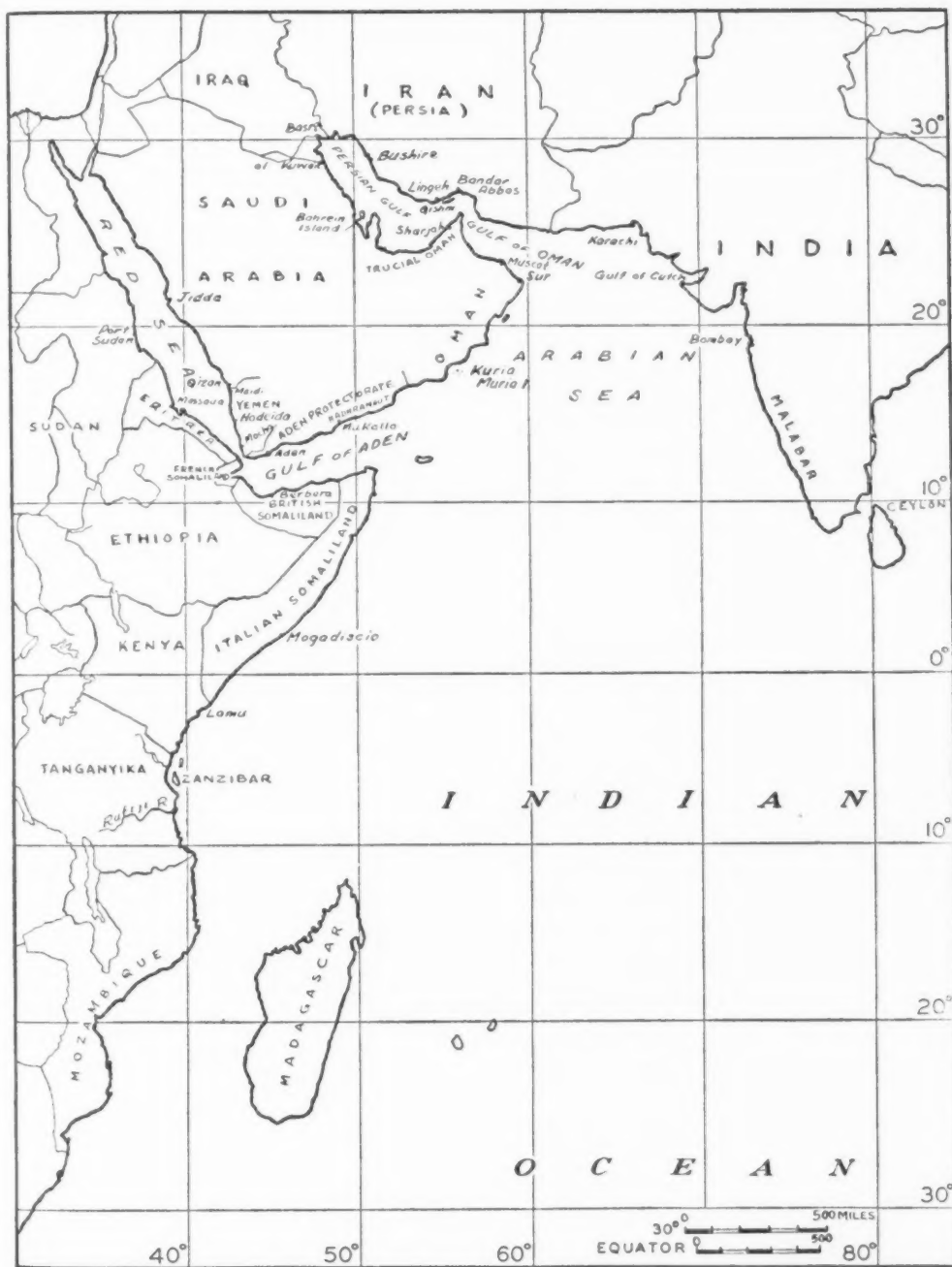


Fig. 1. Map showing the area discussed in the text. Persian Gulf dhows still coast to Zanzibar on the northeast monsoon and return on the southwest monsoon

noted that Western shipping could have successfully accomplished the same end by simply coasting, even if the direct southern route to India had never been discovered.

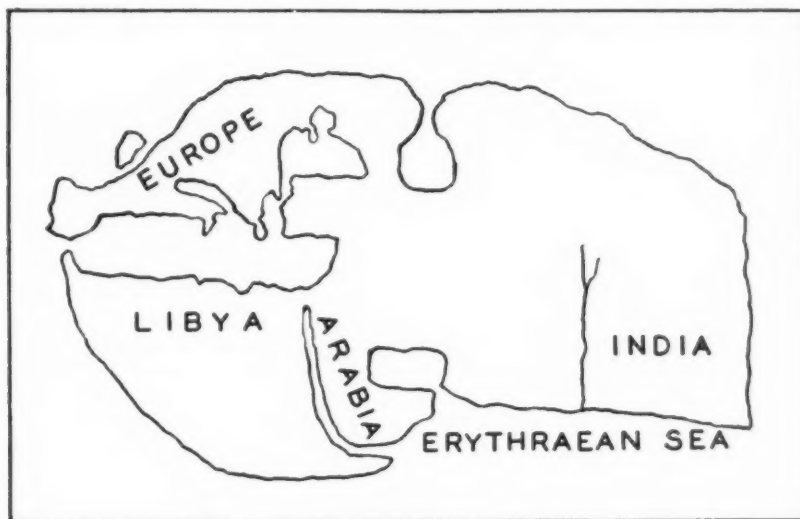


Fig. 2. The East as the ancient Greeks and Romans visualized it in the first century B.C. The map is constructed from distances and directions presented by the ancient geographers

It should also be emphasized that for the people inhabiting the coasts there was never any 'discovery' of the fact that the monsoon trade winds blew in one direction along the South Arabian and East African coasts for six months and then blew in the opposite direction for another six months; the people up and down these coasts knew it as a fact. Thus it was probably known to the Babylonians and Egyptians that the winds along the coasts in the Indian Ocean were subject to seasonal reversals. The Babylonians had organized sea trade as early as the twenty-third century B.C.

However, the fact that a ship could sail between India and Arabia directly, by a route shorter than the coasting route, had to be discovered. Whether it was the Indians or the Arabs who discovered this is not known; while we have a lack of reference to ancient Arabian shipping, there is considerable material referring to Indian shipping before the Christian era. A Buddhist record attributed to the fifth century B.C. relates that the sailors then used 'shore-finding birds' to find land.<sup>2</sup> They released the bird and, if it could not spot land, it returned to the boat;

<sup>2</sup> T. W. R. Davids, *Journal Royal Asiatic Society* (1899), p. 432.

however, if it sighted land, it headed straight for it, showing the sailors the direction of the nearest land. Certainly this would seem to indicate voyages of more daring than mere coasting voyages. There are numerous Sanskrit and Pali references to Indian trading voyages dating from about the third century B.C., and there is one Sanskrit manuscript containing a treatise on shipbuilding in ancient India, giving the sizes (ranging up to 260 feet in length) of dozens of types of ships.<sup>3</sup>

Zanzibar is the unofficial southern port for the lateen fleet sailing down from the north, although the Indians sometimes go on to Madagascar. Soon after the northeast monsoon has set in, lateen craft start to come into Zanzibar. Arabs come from the Persian Gulf ports of Basra, Kuwait, Bahrein, and Sharjah on the Trucial Coast of Oman; Persians send ships from the Persian Gulf ports of Bushire, Lingeh, Qishm, and Bandar Abbas. Arabs of the Oman ports of Sur and Muscat on the Gulf of Oman and Indians from the Gulf of Cutch and the Malabar coast all send dhows down to Africa. Arab craft also sail down from Aden and Mukalla in the Hadhramaut, while the Red Sea contributes its craft from Port Sudan, Massawa, and Hodeida. Even the Somali coast contributes to the fleet arriving at Zanzibar, with dhows coming down from Djibouti, Berbera, and Mogadiscio.

Kuwait is the largest maritime and dhow-building port in the Persian Gulf, with Bahrein a very poor second. While Bahrein cannot begin to compare with Kuwait from a maritime standpoint, it probably ranks ahead of the latter as an emporium in the Persian Gulf. It serves for all the entrepôt trade to the eastern coast of Saudi Arabia, the goods coming into Bahrein in large dhows and being transhipped from Bahrein to Arabia in shallow-draft *jalbhuts* (see Plate 17—top). In 1939 Kuwait had 106 ocean-going *bhums* on the registry.<sup>4</sup> However, the majority of the Kuwait deepwater *bhums* sail to India, rather than to Africa, carrying dates from Basra. The mariners of Kuwait probably reached their present maritime status a little over a century ago. Palgrave traveled in the Persian Gulf in 1862-1863 and was much impressed with the maritime activity of Kuwait:

Among all the seamen who ply the Persian Gulf, the mariners of [Kuwait] hold the first rank in daring, in skill, and in solid trustworthiness of character. Fifty years since their harbour with its little town . . . was a mere nothing; now it is the most active and the most important port of the northerly Gulf.<sup>5</sup>

<sup>3</sup> R. Mookerji, *Indian Shipping* (Bombay: Longmans, Green and Co., 1912), p. 19.

<sup>4</sup> A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 399.

<sup>5</sup> W. G. Palgrave, *A Year's Journey Through Central and Eastern Arabia (1862-63)* (3rd ed., London: Macmillan and Co., 1866), II, 386.



However, a century before this, Kuwait was apparently noted more for its pearl fisheries (which are still important) than for its maritime trade, as Niebuhr related that in 1763

Kuwait is a sea-port town. . . . The inhabitants live by the fishery of pearls and of fishes. They are said to employ in this species of naval industry more than 800 boats. In the favorable season of the year, this town is left almost desolate, everybody going out either to the fishing, or upon some trading adventure.<sup>6</sup>

In Niebuhr's time, in the eighteenth century, the Omani sailors from Muscat and Sur on the Gulf of Oman were the famed Arab mariners, for Niebuhr related that

The inhabitants of Oman, although not fond of sea-fights, are nevertheless the best mariners in all Arabia. They have several good harbours, and employ many small vessels in the navigation between Jidda and Basra. To this last town there come annually fifty such vessels.<sup>7</sup>

In the middle of the last century Muscat was still an important maritime port, for in 1854 Osgood related that

Several ports in the Persian Gulf are tributary to it, and some excellent ships and a large number of [*baghlas*] employed in coasting and foreign trade, are owned by the Banian merchants at Muscat. In fact more than half of the trade of the Persian Gulf is carried on in ships owned at Muscat. . . . The trade with America, which is carried on chiefly by vessels from Salem does not exceed thirty-five or forty thousand dollars annually. Dates and cash are usually taken in exchange for American merchandize.<sup>8</sup>

In the present day Muscat has completely fallen from its former prized position and given way to Kuwait and Bahrein Island in the Persian Gulf. However, the port of Sur in Oman still carries on the maritime tradition of the Omanis and maintains a considerable fleet of dhows which have long been prominent in the trading along the African coast.

The craft that make the trip down the African coast from Arabia are by no means all large ocean-going vessels; craft of all sizes and descriptions come into Zanzibar. Villiers<sup>9</sup> tells of seeing a 30-foot *jalbhut* from Oman sailing down the African coast. Having owned and sailed a *jalbhut* of about the same size in the relatively calm Persian Gulf waters, I have nothing but the utmost respect for anyone with the nerve to sail such a small open boat several thousand miles in the potentially rougher Indian Ocean.

<sup>6</sup> C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), II, 127.

<sup>7</sup> *Ibid.*, 122.

<sup>8</sup> Osgood, *Notes of Travel* (Salem, 1854), p. 81.

<sup>9</sup> A. Villiers, *SS*, p. 190.

Estimate of the size of the dhow fleet sailing down the African coast is difficult, as the Arab goes to extremes to evade official statistics. The Mombasa port statistics for 1937 showed 1,427 dhows entering the port.<sup>10</sup> Not all the ships sailing to Zanzibar put into Mombasa, which is only a day's sail from Zanzibar. It must also be remembered that a certain percentage of the figure represents Mombasa dhows and dhows of neighboring ports on local coastal trading ventures. In Aden some two thousand dhows trade in and out of the port every year. However, a large proportion of this figure represents Adenese dhows and neighboring dhows that do most of the cargo carrying to the small ports in the southern Red Sea and the Gulf of Aden; only a small percentage of this figure represents dhows passing through Aden on their way to Africa. Thus it would seem that the total number of craft sailing down the East African coast may well range over a thousand, depending upon economic conditions. Only a small portion of these are Indian craft, for Vaidya<sup>11</sup> estimates that about seventy-five Indian vessels of from one hundred to two hundred tons are engaged in the traffic to Africa, mostly from the Gulf of Cutch.

The Indian Ocean dhow trade is definitely a seasonal venture, as the ships usually depend on the monsoons to carry them on fair winds to their destinations. Vessels from the Persian Gulf and from India make one round trip a season when traveling south to East Africa. Arab and Persian ships start leaving the Persian Gulf in August and September with the first date crops and return in May and June, averaging eight to ten months for the round trip. Indian ships making the Africa run leave in November and return by June, averaging about six months for the round trip. The Indians have less time in which to make the trip because of the violent storms on the west coast of India during the southwest monsoon, which makes sailing unwise during the months of June, July, August, and September.

When making the trip between the Persian Gulf and India it is customary for the Arabs, Persians, and Indians to make two round trips a season. The vessels leave at the same time as the ships going to Africa; that is, in August and September for Persian Gulf ships, and in November for Indian ships. Because of the monsoon storms, the Indians have to be home by June, while the Arabs only have to be out of Indian waters by June. Actually, Arab ships start arriving in November and are ready to leave India after their second trip in March or April. These trips be-

<sup>10</sup> A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 413.

<sup>11</sup> K. B. Vaidya, *Sailing Vessel Traffic on the West Coast of India* (Bombay: Popular Book Depot, 1945), p. 57. I am indebted to Mr. Alexander Crosby Brown for calling this most valuable work to my attention.



tween the Gulf and India usually average about three months a round trip.

The effect of the southwest monsoon in India is felt most in the southern part of India. In April the northeast winds change gradually to the southwest; the monsoon breaks in force on Ceylon in the third week in May and moves up the coast, hitting Bombay about the first week in June, and finally reaching Karachi about the last of June.

Along the Malabar coast it is not unusual for 150 inches of rain to fall in four months from May into September. However, farther north on the Sind coast there is only about twenty-five inches of rain during the whole southwest monsoon. Thus on the Malabar coast there is no coastal trade carried on from May through September. During a storm in May 1943 over two hundred vessels were sunk on the Malabar coast and more wrecked.<sup>12</sup> However, on the northern Sind coast of India native shipping is closed down only during June and July, so that there is a ten-month shipping season possible there, as compared to seven months on the Malabar coast. The west coast of India gets about a month more of the southwest monsoon than the western part of the Indian Ocean, where the northeast winds start about October. The northeast monsoon usually brings fair weather with little rain to the west coast of India. Away from the coast of India the southwest monsoon is a fair weather trade wind blowing up from Africa.

There are numerous Indian firms that will insure cargoes carried on Indian coastal sailing craft; the insurance rates give a vivid picture of the relative danger at sea during the various periods of the two monsoons:<sup>13</sup>

<i>Season</i>	<i>Month</i>	<i>Rate</i>
Change	November	1½%
Northeast Monsoon	December-January	1%
	February	1¼%
	March	1½-1¾%
Change	April	2½-6%
Southwest Monsoon	May	6-20%
	June-July-August	No insurance
	September	2½%
	October	1½%

This shows very graphically why Arab ships stay out of southern Indian

<sup>12</sup> Ibid., p. 16.

<sup>13</sup> Ibid., p. 136. These rates are average rates for the southern part of the coast, and of course would change for the northern part of the coast where the southwest monsoon does not set in until June.

waters from May to September, and why most local Indian craft are drawn up on the beaches.

## II

Dates are probably as important a factor as the monsoons in maintaining the large lateen fleet in the waters of the Indian Ocean. By a lucky coincidence, the great date crop of Iraq begins to ripen just before the northeast monsoon sets in about October. The great maritime expansion of the port of Kuwait has probably been due in no small part to its proximity to Basra, the port through which most of Iraq's dates go.

Dhows come to Basra for dates from Kuwait, Bahrein, Persia, Oman, India, and even as far away as the Hadhramaut. Starting in the latter part of August and continuing into September, Kuwait deepwater ships are floated from the beaches, where they have rested for several months during the summer, making ready for the run to Basra to pick up dates. The farther the home port is from Basra, the earlier the ships must depart, so that craft from the Hadhramaut must allow a month or more to get to Basra, riding up to the Gulf of Oman on the summer monsoon and then working their way up the Persian Gulf, where the monsoon is not felt.

Almost without exception the date cargo is carried out of Basra on consignment for some merchant; sometimes the destination is known on leaving Basra, but often the consignment is sent to Aden or Mukalla (see Plate 23—bottom) in South Arabia for final shipping instructions from the Arab or Indian export firm shipping the dates. Dates are usually not carried into the Red Sea much past Hodeida in the Yemen in Kuwait ships, although Villiers<sup>14</sup> tells of a Kuwait *bhum* transporting a load of dates as far as Qizan in Saudi Arabia.

In such a manner dates have been leaving Iraq for decades bound for the southern shores—that is until the winter of 1949. In that winter, for the first time in many years, the great date-bearing Kuwait *bhum* fleet failed to appear in its usual strength in the waters along the southern shores of Arabia; only a portion of the usual quota appeared in Aden by the first of 1950. The dates that would ordinarily have come into Aden in Kuwait dhows came down unceremoniously under steam. What caused this abrupt change in the well-established status quo of the dhow trade? The same thing that has wrought so many other radical changes in the economy of the Middle East lately—oil!

Kuwait is actually a city-state with few industries except pearling, fishing, and shipbuilding; there are no farms, no date plantations, and only

<sup>14</sup> A. Villiers, *SS*, p. 366.

a few scattered Bedouin tribes. The Kuwait Oil Company is now operating in high gear, and has apparently offered so many opportunities for natives that *nakhodas* (captains) have difficulty in getting men to sail their ships at the wages they can offer. Sailors never get any regular wages on a dhow, receiving a share of the earnings of the ship only after the voyage is over. Many sailors have apparently found that it is a comfortable feeling to receive a regular wage every week! It is too early yet to tell whether or not the change is permanent.

There has also been a noticeable fall-off in date-bearing Arab dhows sailing to India, but apparently for a different reason. Vaidya<sup>15</sup> states that during the 1943-1944 season, presumably for the first time, sixty to seventy per cent of the Arab fleet that usually brought dates failed to appear because of Arab restrictions on the export of wet dates and because of the high prevailing prices of the dates. Thus, this case is not allied to the present situation prevailing in Kuwait, as during the 1943-1944 season dates presumably were not shipped to India by any other means.

However, even if Kuwait is unable to put its *bhums* to sea, the date crop in the future will still probably be carried out of the Persian Gulf in dhows as usual; it will take time to attain a balance again. Whether the port of Sur rises to the challenge or whether some Persian port takes the trade remains to be seen. The Suris from Oman are logical successors to Kuwait, for in times past they have been noted for taking cargoes at lower rates than the Kuwaiti or any other mariners could afford to, and they have a long maritime history.

It is interesting to note that oil activities in other areas in the Persian Gulf have drastically affected the marine activities of other coastal towns. Over ten years ago, the Saudi Arabian ports of Jubail, Qatif, and Darin used to send out over a hundred dhows yearly to join the Persian Gulf pearl fisheries. Now if they send out several dozen dhows it is news; the Arabs who used to dive for pearls now have steady jobs with the Arabian American Oil Company. The same has happened on Bahrein Island. The Bahrein *nakhodas* are no longer able to find a multitude of divers who will accept the wage the *nakhodas* are able to offer; thus the Bahrein pearl fleet is only a shadow of what it was a quarter of a century ago.

Most but not all Arab dhows load dates first; however, many Omani dhows bring cargoes of dried fish and fish oil, for fishing is particularly good in the waters off Oman, and sharks and large tuna are caught in considerable amounts, both for home consumption and export. Sometimes, however, the Omanis may set out for Africa empty, or with only a partial

<sup>15</sup> K. B. Vaidya, op. cit., p. 207.

cargo of fish if the local supply is not sufficient, and fish their way down the Arabian and African coast, selling fish wherever they can. Then they do the same thing on the way back. Mukalla is a favorite stopping place on the way down to Africa; I have seen dozens of *bedans* from Sur come into Mukalla and lay out their catch of shark or tuna on the beach to dry while they beached their dhows and put a coat of shark liver oil on their hulls (see Plate 18—top and bottom). Shark is a favorite Arab food; the flesh is cut off in strips or slabs and dried, while the liver is saved for its oil. The Arabs have little use for the tails or fins of the shark, but they are all meticulously saved and eventually find their way to China via India.

Thus these fish-bearing dhows from Oman start their trading venture from their home port, carrying a product of the port, and never carry other cargo; they trade fish from Sur to Zanzibar and back. For this trade they apparently always use the primitive *bedan*, usually ranging from fifty to sixty feet in length. The Suris export dates from Oman, or go to Basra for a cargo; when carrying dates they use large *sambuks* and *baghlas*.

In contrast to Arab and Persian ships which sail along the coasts the whole way, whether going to India or Africa, Indian vessels usually sail straight from India across the ocean for South Arabia or Africa with consignments of goods from Indian exporters at specific ports. Only rarely do they carry dates; their usual cargo consists of the products of India. From the Malabar coast they may carry coir rope stuffs, coir matting, teakwood, teak dugout canoes, coconuts, spices, cement, bricks, or tiles, while from Bombay they may pick up cotton piecegoods, groundnut oil, or tea. Most of the Indian ships that voyage to Arabia or Africa come from the Gulf of Cutch; few if any craft from Bombay or the Malabar coast carry this trade today.

In vivid contrast to the Arab date cargo and Indian cargo, which is usually on consignment, the replacement cargo for the rest of the voyage for the average Arab dhow is purchased by the *nakhoda* from the profit made on the date freight, for sale at the best market. After its date cargo has been discharged, the dhow becomes a trader in every connotation of the word, picking up and selling cargoes as she coasts south along the South Arabian and East African coast.

Sometimes the *nakhoda* may pick up a small cargo of partially spoiled dates to unload on the Africans; these the crew may wrap meticulously in fancy wrappers. At Aden the dhow may take on salt, sugar (from Java), rice (from Rangoon), canned goods, hardware, kerosene, or cotton goods and prints, and from the Hadhramaut coast the cargo may be dried shark

or other dried fish, *ghee* (clarified butter), honey, tobacco, grinding stones, and straw work (fans, mats, and baskets). It must be remembered that most of the cargo moving around the Middle Eastern waters in small vessels, whether dhows or small coastal steamers, is for the native trade and is destined for native bazaars, which are noted for the cheapness and poor quality of their wares. Once the dhow is loaded it is ready for the trip down the East African coast; however, the Arabs sometimes take a month or more to collect a full cargo.

Upon the *nakhoda* of the dhow rests the responsibility of getting another cargo for continuing down the African coast once the consigned date cargo is discharged. Invariably the *nakhoda* is the nominal owner of his dhow, so he acts as his own agent. As the cargo loaded after the dates are discharged is not on consignment, its selection is a matter of the *nakhoda's* judgment, with an eye to what will sell best in the African markets. However, a cargo that must be regarded as essentially on consignment is that of passengers. On some Africa-bound dhows passengers comprise a considerable portion of the cargo. The competition for passengers is very brisk, so that there is sometimes a race among the various *nakhodas*, who hasten to neighboring ports via motor launch as soon as their ships reach South Arabia to discharge their dates.

Through the dhows there is a constant flow of Arabs from South Arabia and Oman and of Indians from India. The immigrants usually become porters, hawkers, musicians, or beggars, but if they are very industrious, they may end up owning a small shop in the *sug*. Their usual aim in migrating is to work long enough so that they can go home after they save a little money; usually they never make enough to get out. Villiers<sup>16</sup> states that the Italian officials in Mogadiscio checked four thousand passengers on thirty-five dhows that were in the harbor when he was there in 1939. In 1937 the fare along the Hadhramaut coast between ports was three rupees.<sup>17</sup> In 1939 the fare from South Arabia to any African port was only eight rupees for men and twelve for women.<sup>18</sup> In Aden in 1950 the fare for natives traveling as deck passengers on A. Besse and Company dhows with no accommodations was 15 rupees to Berbera, Djibouti, and other ports about 150 miles from Aden; thirty rupees to Massaua, Mukalla, and ports about 450 miles away; and one hundred rupees to Jidda, Port Sudan, or ports approximately one thousand miles from Aden. These were fixed rates on the dhows operated by Besse; other dhows that

<sup>16</sup> A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 404.

<sup>17</sup> F. Stark, *A Winter in Arabia* (New York: E. P. Dutton & Co., 1940), p. 313.

<sup>18</sup> A. Villiers, *SS*, p. 78.



were trading down the coast could easily afford to undercut these rates.

As was mentioned above, women are usually charged higher rates for travel on dhows; this is because they have to be segregated and usually manage to make trouble, unintentional as it may be. Villiers<sup>19</sup> gives a graphic description of the nuisance a group of women can cause on an Arab dhow. For centuries women have apparently been creating disturbances on Arab dhows, for Niebuhr, who traveled down the Red Sea on a dhow in 1763, relates that

In our passage, we found ourselves in danger of a worse misfortune than shipwreck. The females, who were lodged under us, more than once suffered linen, which they were drying, to catch fire, in consequence of which the vessel must have been burnt, if we had not been alarmed by their screams. . . . Those women were indeed extremely troublesome and indiscreet.<sup>20</sup>

Besides the ship's cargo, every member of the crew usually lays in a store of goods that he personally peddles. Each sailor is allowed a sea chest (see Plate 22—bottom), which he fills with print goods, turbans, flashlights, razors, sarongs, cigarettes, and perfumes which are later diluted. The *nakhoda* usually has some rugs or carved wooden chests to peddle (see Plate 17—bottom). Virtually none of this material enters Africa legally, but is for the most part smuggled in. Most of these trivial goods are carried in by the Arabs personally. Villiers<sup>21</sup> relates that he saw one man wear three gowns and eight sarongs, then wrap more sarongs around his knees, and make six trips through customs a day. Sometimes they are detected and stripped, but that is part of the risk. Often the Africans come out in canoes at night and remove the goods in small quantities. Frequently Arabs travel down the African coast on dhows as professional smugglers, living only for the smuggling they can accomplish. This sort of trading has been going on for centuries, for Paris<sup>22</sup> related that ' . . . leur navires sont de vraies caravanes dans lesquelles tous les matelots ont un intérêt.'

For the Arabs and the Persians, the trip down the African coast is leisurely and slow. It is not unusual for a dhow to stay in a port for three or four weeks haggling over a cargo, only to leave without having transacted any business. There is no rush, simply because there would be a long wait for the southwest monsoon to set in and carry them back north, if

<sup>19</sup> Ibid., p. 78 ff.

<sup>20</sup> C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), I, 219.

<sup>21</sup> A. Villiers, SS, p. 143.

<sup>22</sup> F. E. Paris, *Essai sur la Construction Navale des Peuples Extra-Européens* (Paris, Bertrand, [1841]), p. 9. ' . . . their ships are true caravans in which every sailor has an interest.'

they completed their trip down the African coast to Zanzibar too quickly.

Once the trading voyage down the African coast to Zanzibar is completed, Arab and Persian craft usually load a cargo of mangrove poles for shipment back to Arabia, unless they have the rare luck of getting cargo on northern consignment. For centuries mangrove poles from Africa have been used in the construction of houses in Arabia, where there is an extreme shortage of wood of any kind. Indian dhows never load mangrove poles since there is an abundance of wood in India. Mangrove trees are plentiful along the East African coast in swamps at certain river mouths; most poles come from the Rufiji Delta, a little south of Zanzibar, and from Lamu, north of Zanzibar. The poles are cut by the dhow crews, with the aid of Swahili cutters recruited for the purpose.

Alan Villiers<sup>23</sup> spent a month in the Rufiji Delta with a Kuwait crew obtaining a cargo of mangrove poles and has given us a most vivid description of pole-gathering activities. In the Rufiji Delta the mangrove trees grow in the soft, muddy delta, so that the cutters must wade in mud and water all day long. The branches are stripped with small axes and the poles loaded into small dugout canoes and brought to collection points where they are graded and stamped by government inspectors. Frequent and sometimes constant rain and savage mosquitos make a pole-gathering trip in the Rufiji Delta a suffering hell!

The Arabs have to pay the firm holding the pole-concession on the swamp for the poles, but in true Arab fashion they manage to load considerably more poles than they pay for. There is a well-organized pole-stealing racket, with everyone in on it, from the cutters to checkers and inspectors, with the exception of the head government forestry inspector. As the prevailing market price for mangrove poles in Arabia is about the same as the list price in Africa, the Arabs could not make any profit if they did not manage to load some extra poles.

In addition to mangrove poles, the Arabs may load cocoanuts, cloves, cocoanut oil, soap, or vermicelli. A private venture of the crew for the return trip from Zanzibar may be in lemons. Around Zanzibar lemons can be bought by the canoe-load for several rupees. The crew can squeeze the lemons and bottle the juice in bottles they have acquired along the way, using a pinch of salt as a preservative. The juice is sold at a nice profit in northern ports, where it is diluted for making sherbet.

In making the trip home on the southwest monsoon the Arabs waste little time, for the sooner they can get back, the more time they have for other activities before it is time to ship out again. Dhows from Oman

<sup>23</sup> A. Villiers, *SS*, pp. 237-261.



usually try to sell their mangrove poles along the South Arabian coast. If they do not sell their poles by the time they get to Oman, they simply put them on the beach and wait until next season. Knowing that the Omanis flood South Arabian ports with poles, the Bahreinis, Kuwaitis, and Persians sail straight for the Persian Gulf and its more profitable markets. Likewise, the Omanis, realizing that the Persian Gulf markets are flooded in the early summer, wait until late summer if they have to sell their poles in the Persian Gulf. Sometimes dhows from Oman carry firewood or fish oil in addition to mangrove poles if they go north to Basra for dates.

If a vessel sells its cargo of mangrove poles a considerable distance from her home port, it may load coral rock as ballast if it is available; this may be sold in Kuwait and ports in eastern Arabia. The coral rock is pried off the sea bottom and is a common commodity for construction purposes in a land where building rock is almost as scarce as wood on the sterile sandy coast.

As we have seen above, Persian and Arab ships make two trips to India during a season, usually carrying dates on consignment, but sometimes they carry dried fish, dried fruit, palm leaf mats, and coffee from the Persian Gulf and Arabia. After they have unloaded, they pick up a cargo of the products of India for sale in their native waters. These products consist mainly of teakwood timber, teak dugout canoes, coir roping stuff, coir matting, bamboo, cotton-goods, cocoanuts, chests, chairs, spices, and tea. Cement and tiles are occasionally loaded, but bricks (a very common product of the Malabar coast) are rarely loaded, as they are manufactured in Iraq and shipped out of Basra. Virtually all the teakwood for dhow construction comes from India, and Indian teak dugout canoes have been spread up and down the shores of the Indian Ocean, the Persian Gulf, and the Red Sea by dhows.

The *Periplus of the Erythraean Sea* tells of ships coasting on the African coast and trading cargoes as they went two thousand years ago. But cargoes have changed considerably from those ancient times when alabaster, myrrh, and frankincense were exported from South Arabia and tortoise shell, hippopotamus teeth, cinnamon, and slaves were exported from East Africa.

By 1800, slaves had become the chief cargo out of East Africa, with Zanzibar as the center; however, with European intrusion into the waters of the Indian Ocean, eventually the British more or less successfully stopped the slave trade, which was in large part carried on by the Omanis. It has been estimated that by 1873 there were thirty thousand slaves ex-

ported annually from East Africa to the Persian Gulf and Arabia.<sup>24</sup> The term 'human cargo' is no exaggeration, for slaves were packed in the holds of dhows with an eye only towards maximum capacity. There is an old sketch of a small dhow loaded with 156 slaves (men, women, and children) packed into the hold, on the bottom and on two bamboo decks above with only three feet clearance between decks (see Figure 3).<sup>25</sup>

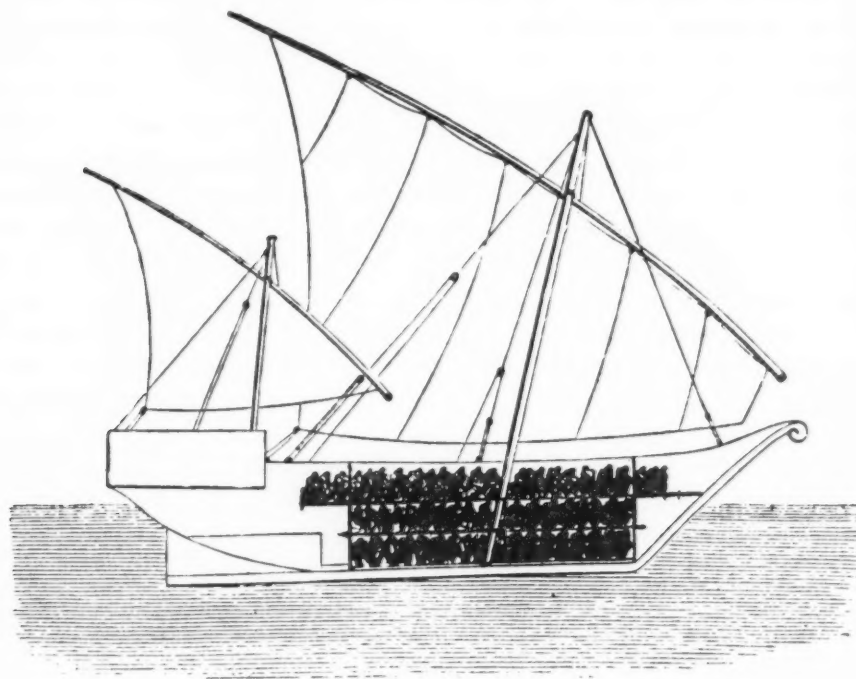


Fig. 3. Slaves packed into the hold of a small dhow, on the bottom and on two bamboo decks, with only three feet of clearance

Today slave-running carries such high penalties that no Arab would attempt it with a hold full of slaves on a long voyage to the Persian Gulf. However, the slave trade still operates on a reduced scale in the Red Sea between Africa and Arabia, usually utilizing fast *zarooks* and carrying only a small number of slaves. The trade is still active, mainly because both slavery and white slavery still flourish in Saudi Arabia and Yemen. These two countries signed neither of the two world conventions: the one in 1921 forbidding traffic in women and children and the one in 1933

<sup>24</sup> Anonymous, 'Vessels Used in the Zanzibar Slave Trade,' *The Illustrated London News*, LXII (March, 1873), 208-209.

<sup>25</sup> Ibid.

forbidding traffic in adult women;<sup>26</sup> in 1948 these same two countries failed to file reports on efforts to suppress traffic in women, children, and obscene publications.<sup>27</sup>

Slaving is difficult to stamp out, as the African victims are led to believe that their social status will be bettered. Actually, there is some truth in this, for an African, even as a slave, has a far better life in Arabia, since the Arabs treat their slaves fairly.

British regulations at Zanzibar provide that dhows must carry crew members voluntarily signed on and not in excess of that needed to sail the ship.<sup>28</sup> At Mombasa, *British Regulations for Native Vessels* provides that no man may be signed on as a seaman without satisfying the officials that he has voluntarily shipped, and further that no passengers are to be shipped without the knowledge of the authorities.<sup>29</sup> However, Villiers<sup>30</sup> relates that an Omani *sambuk* intentionally ran down a fishing canoe off Africa and 'saved' two Africans to be sold later as slaves in Arabia.

In essentially the same category as the slave is any other illegal or illicit trade. During World War I gun-running was at a high, but now the trade is not very prosperous. There is considerable cargo smuggled to avoid duties; tea and other goods are run to Persia by the Arabs on the Trucial Coast of Oman—the old Pirate Coast.

The customs and immigration officials in Africa do not have much use for the Arab deepwaterman, with his Arab passengers and smuggling crew. On the other hand, the Arab takes delight in deception, and attempts to confuse the European as much as possible. No large dhow ever carries a visible name; its papers usually contain an official name, but more often the dhow is known by the name of the *nakhoda*, who is usually the nominal owner.

As soon as an Arab dhow reaches an African port, the local officials try to get a passenger and crew list; in this they never succeed, as certain of the passengers always vanish into the native anchorage as soon as the anchor is down, to return after the survey is made. This is easy, as all the native craft are herded into a separated anchorage and often new arrivals have to drive into small spaces in the middle of the anchorage.

Few carry passports or other identification, so actual identification is

<sup>26</sup> J. L. Carver, 'Slavery's Last Stronghold,' *United Nations World*, II, No. 5 (June, 1948), 24-27.

<sup>27</sup> However, in all fairness it should be pointed out that the USSR, Afghanistan, Byelorussia, Honduras, Iceland, and Norway also failed to make reports on the grounds that the problem has not arisen in their countries.

<sup>28</sup> A. Villiers, *SS*, p. 212.

<sup>29</sup> *Ibid.*, p. 190.

<sup>30</sup> *Ibid.*

difficult, if not impossible. When shipping out of a port, an Arab simply gets approval from the port police and moves his chest aboard. However, in Africa some ports will not allow passengers to discharge; to get around this, the Arab *nakhoda* sometimes obtains permission for shore leave for some of his passengers, and brings back a different group, who want to leave. Sometimes as much as twenty per cent of a passenger list of several hundred may be shifted in a port, but the dhow still leaves with a full complement, so everyone is happy.

Regulations are a challenge to the Arab, although some of his disregard for regulations may be classed as nothing less than pure thievery. Villiers<sup>31</sup> relates how a Persian dhow managed to load two hundred tons of salt stolen from the Italians at Haifun in 1939. The salt was successfully loaded at night from small canoes, but the dhow was apprehended just as it was ready to sail, and the *nakhoda* was thrown into jail.

### III

Arab navigation, on the run from Arabia down the African coast or over to India, is little more than dead reckoning, and a poor brand at that. The only instrument the large Arab craft carries is a compass, which is assumed to give a true reading. Most Arabs have never heard of compass deviation and will not believe that a compass can give anything but a true reading. Besides a compass, the deep sea dhows sometimes carry a chart, which may be of surprisingly recent origin or of surprisingly ancient origin; Villiers<sup>32</sup> tells of once seeing an Arab pilot armed with a chart of the Indian Ocean corrected to 1746! A few Arabs carry Isa Kitamis' *Directory of Eastern Seas* in Arabic, which contains many useful descriptions of the landmarks which may be encountered.

However, as the Arab navigates, a 1746 chart and a faulty compass are ample for his needs, for he simply coasts along, usually in sight of land. Going down to Africa, he sails before the wind with land to starboard; returning he sails before the wind with land to port. The seas that he sails are like a book to him, and he seldom needs his chart; this is possible, as there are no reefs along the African way. When going to India the Arab proceeds in the same manner, coasting along. In going to Africa, the Arab may get out of sight of land while crossing the Gulf of Aden, but it is only a matter of a day or so, as the land is mountainous and high on both sides of the Gulf. In sailing the waters of the Persian Gulf, the dhow

<sup>31</sup> Ibid., p. 112.

<sup>32</sup> Ibid., p. 149.

is often out of sight of land, at least on the Arabian side, as the Arabian side is treacherous and the coast low and sterile.

A dhow sailing from the Persian Gulf to Africa or to India does not actually go at all out of the way by coasting, as a glance at a map will show. This practice of coasting has the added advantage of keeping the dhow within easy rowing distance of land in case the ship should go down, a possibility never overlooked.

In contrast to the Arabs and the Persians, the Indians still navigate their dhows over open ocean from India. However, a glance at the map will show the reason—craft from India would have to go far out of their way to coast to Africa in sight of land. Thus by necessity the Indians have maintained the knowledge of navigation that the Arabs and Persians had mastered so successfully in medieval times; being able to get along successfully by coasting their deepwater craft, the Arabs and Persians have lost the navigational knowledge which in medieval times brought them in contact with junks from China in the waters farther east. When the Arab has to sail a navigated course, he usually, though somewhat reluctantly, gets an Indian navigator. It is interesting to note that the ancient mariners in Greek and Roman times successfully navigated the southern route to India using only the sun and the stars; the mariners' compass was not invented until the Middle Ages.

There is one other alleged aid to navigation in the Indian Ocean that was known to the ancients. Niebuhr traveled from Arabia to India via dhow in 1763 and related that

The passage between Arabia and India was formerly thought very dangerous. Ships were carried on by so rapid a current, that they could neither keep their reckoning, nor distinguish the coast during the rainy season: several were consequently lost on the low coasts of Malabar. These misfortunes have ceased to take place, since an observation was made, which has been thought new, although Arrian speaks of it being known to the ancients; in the Indian Ocean, at a certain distance from the land, a great many water serpents, from 12 to 13 inches in length, are to be seen rising above the surface of the water. When these serpents are seen, they are an indication that the coast is exactly two degrees distant. . . . We saw some of these serpents, for the first time, on the evening of the 9th of September; on the 11th we landed in the harbour of Bombay.<sup>33</sup>

On the run down to Africa the Arabs sail by night as well as by day; at night they make sure they are well out at sea and set a safe course by the compass. With its many reefs the Red Sea is an exception, for even local craft with a knowledge of the way anchor by night and sail by day

<sup>33</sup> C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), II, 373.



whenever they are near reefs. An exception to this is the slave-runner dashing from Africa to Arabia, for his activities are best carried on under cover of darkness. The reefs in the Red Sea are the main reason why foreign dhows do not venture very far into its waters.

In the field of navigation the Arabs are little impressed with Vasco da Gama's voyage, so famous in the West.<sup>34</sup> The Arabs take all the credit themselves; they claim that da Gama forced an Arab pilot to show him the way to India. Arab legend relates that an Ibn Majid, a famous pilot from the Persian Gulf, was delivered to da Gama by the Sheikh of Malindi (in present-day Kenya) as a hostage for stopping the siege of the town; the Arabs immortalize this Persian Gulf pilot and associate da Gama only with European intrusion into their territories.

The Arab dhow is actually not a very seaworthy craft (see Plate 19—top). It manages very successfully in fair weather, but in any kind of rough weather the dhow is likely to get into trouble fast. The *baghla* is apparently considerably less seaworthy than the *bhum*, as even Arab passengers (who are not particularly well informed about anything) prefer to travel in *bhums*.<sup>35</sup> Apparently the great transom stern of the *baghla* tends to make the craft unmanageable in heavy seas.

In the African port of Mombasa a Casualty Book listing all dhow casualties in the vicinity of the port shows that, while there were frequent accidents with small craft and less with larger craft, there was little loss of life.<sup>36</sup> This stems from the Arab's method of coasting close enough to land so that he can row ashore. However, no records list the number of dhows that have gone down with complete loss of life.

If the dhow springs a leak, it may often be disastrous. On a heavily-laden dhow the crew cannot get at the leak to repair it, and not having any pumps they do not even have time to start bailing. If they can get at it, the Arabs have been known to stop a leak where a plank was stove in by filling a cloth with rice, tying a string around the gathered neck and stuffing it in the hole; when the rice expands it fills the hole tightly.

Villiers<sup>37</sup> relates that a 178-ton Indian dhow loaded with mats sprang a leak and sank off Africa because the cargo prevented anyone from getting at the leak. The crew took fifteen minutes to clear the dhow, and very soon afterwards the sea was over her decks. The early English traveler Palgrave<sup>38</sup> had the same thing happen to him in 1863—an event which

<sup>34</sup> A. Villiers, *SS*, p. 197.

<sup>35</sup> *Ibid.*, p. 106.

<sup>36</sup> *Ibid.*, pp. 191-194.

<sup>37</sup> *Ibid.*, p. 193.

<sup>38</sup> W. G. Palgrave, *Central and Eastern Arabia* (3rd ed., London: Macmillan and Co., 1866), II, 342 ff.

nearly put an end to his traveling. While sailing in a *baghla* Palgrave was caught in a hurricane just off Muscat; the dhow lay to and drifted. As the storm set in with violence the dhow sprang a leak and in a matter of minutes settled into the sea. After a night in a small boat, Palgrave and eight others (ten men were lost) reached a beach in Oman. Ten other dhows, part Persian and part Omani, also went down off Muscat in this storm with complete loss of life on three of the craft.

A heavily-laden dhow hull-down in the water is extremely vulnerable to rain storms and squalls, even if she does not spring a leak. If such a dhow is caught in a deluge of rain, it may go down very quickly, for without any pumps there is hardly time even to start to hand-bail from the small well. The smaller open-waisted boats and the decked ocean sailers catch all rain, and if enough rain comes down fast enough, the craft simply goes down. Villiers<sup>39</sup> relates how a huge new 500-ton *bhum* sailed out of India on its maiden voyage with a cargo of coir. Caught in a rain squall the first night, the dhow filled with water and scuttled. However, in this instance, the rain apparently swelled the coir, which in turn split the hull. Most dhows lash palm mats amidship to extend the gunwales, whether they are open-waisted or decked; however, this is not very effective in rough weather.

In heavy winds it is customary for the dhow to split a seam or two in its great driving mainsail. However, the sailors will tell you that weak seams have their virtues and act as a safety device to protect both the sail-cloth and the mast from serious damage in sudden blows. In very rough weather the dhow sailor douses his sail and simply allows the craft to drift, without using any steadying sails or sea anchors. Usually they are caught in water too deep for their anchor lines and feel that drifting is the safest way.

The dhow is never prepared for any emergency at sea—it copes with it as best it can when the occasion arises. The dhow never carries any life preservers, life jackets, flares, or any other safety devices. The exception to this is the many Indian deepwatermen which sport life preservers on the stern. If a man falls overboard, Arabs head the dhow up and pull him aboard after he swims to the dhow; if the currents are too strong, they lower the longboat. However, the longboat is never ready to be lowered, as there are usually no davits on a dhow, the longboat being carried on deck; thus to lower it takes considerable time. Nothing is ever secured on board a dhow, on deck or below, and in rough weather the Arab waits until something goes scudding across the deck before he fastens it down;

<sup>39</sup> A. Villiers, *SS*, p. 365.



sometimes it is too late, for it may have already gone overboard. The Arab usually has no lines ready when he comes into a mooring and he may just as often throw a loose anchor over as not.

Dhows never show lights of any kind at night, whether under way or anchored. Although British regulations have forced many dhows from various ports on the Indian Ocean to carry lights, there is unfortunately no way of forcing the Arabs to use them. This undoubtedly results from centuries of travel in pirate-infested waters, where a light at night served only as a signal for sudden attack from pirates. There is only a weak light in the binnacle with which to see the course; everything else is dark. Not even when in the sea lanes off South Arabia, in the Persian Gulf, or in the Red Sea, where freighters and tankers beat a constant path, does the dhow show a light. In case of collision at night, the boat that can prove that it showed lights has a legal edge.

At the West Pier at Ras Tanura on the Persian Gulf, there is often considerable movement of Arab dhows and Arab *lanchs* (kerosene-driven native launches). Dhows slip in and out of their mooring like shadows on nights so black that a dirty white sail could not be seen ten feet away. One night a *lanch*, all of which carry lights, hit a rock-laden dhow amidship and in a matter of seconds sent her to the bottom in forty feet of water. Native divers unloaded her, and she was eventually salvaged. Since then, dhows make a frantic attempt to fan their coffee fires up to a bright glow when they see any *lanch* lights approaching, but they still do not carry standard lights. It is an eerie sight to see the glow of a charcoal fire suddenly light up a large lateen sail directly in your path!

When sailing along their own coasts, the Arabs like to sail in two's and three's. This arises from the fact that piracy is by no means a thing of the past. For centuries piracy and robbery were honorable professions among many tribes along the long Arabian littoral; such a reputation did the piratical Omani have during the last half of the last century that the very sight of their characteristic *bedans* and *batils* brought actual fear to the population of Zanzibar.<sup>40</sup> Niebuhr noted dangerous conditions in the Red Sea two centuries ago:

Although from pirates properly so called, there is little to be feared in the Arabic gulph [Red Sea], yet, so unskilled are the mariners in these latitudes, that they dare not venture to any distance from the coasts. This timorous mode of sailing might expose a single vessel to the robbery of the Arabs; to avoid which, these ships sail in little fleets; four always setting out together, that they may join to defend themselves.<sup>41</sup>

<sup>40</sup> G. L. Sullivan, *Dhow Chasing* (London, 1873), p. 102.

<sup>41</sup> C. Niebuhr, *Travels Through Arabia* (Edinburgh: R. Morison and Son, 1792), I, 212.

It was in the Red Sea that an American ship was plundered in the early nineteenth century; however, the pirates came from the South Arabian coast. This has been described by Osgood:

Conspicuous among the former rulers of Dhafar was Seyed Mohammad Akil, who . . . was led by ambition and avarice to turn pirate. Among other prizes, in June 1806, he captured, plundered, and burned near the harbor of Hodeida, in the Red Sea, the American ship *Essex*, belonging to Salem, and commanded by Joseph Orne. Captain Orne had arrived in the *Essex* at Mocha with sixty thousand dollars to purchase coffee. He was persuaded to sail from Mocha for Hodeida by Mohammad Akil, who, keeping him company in an armed ship, seized the vessel soon after leaving Mocha, and slaughtered all on board except a Dutch boy named John Herman Poll, whom he carried to Dhafar. The young man was kept in servitude, educated as a Mahometan, married and had several children, and when last visited, within a few years, seemed perfectly contented with his lot, having nearly forgotten his mother tongue.<sup>42</sup>

While the Red Sea is now perfectly safe from such attacks, many areas of the long Arabian littoral in the Arabian Sea and the Persian Gulf are definitely not. O'Shea<sup>43</sup> relates that in the Persian Gulf as late as 1944 a large Arab dhow bound for the Trucial Coast of Oman with foodstuffs was attacked by a Persian dhow and the whole Arab crew murdered. Representations were made to the Iran government by the Political Agent of Trucial Oman; the pirates were supposedly apprehended and hanged by the Iran government.

Around the Kuria Muria Islands off the South Arabian coast, the coastal tribes are very piratical. Villiers<sup>44</sup> relates that in recent times the tribes on the Arabian coast near these islands have been known to seize ships at night, plunder the cargo, burn the ship and sell the crew in the interior. They have also been known to cut moorings at night, thereby allowing the ship to drift onto the rocks; then they salvage the cargo. This is apparently nothing new, for when Bent sailed along these coasts in the late 1890's, he noted the extreme suspicion of dhow sailors for the inhabitants of the coast:

While at anchor we heard shouts and cries to come to land, but our sailors would do nothing of the sort. They said a single man might often be seen calling that he was wrecked, and asking to be fetched away, but a party of armed men would be behind a rock, and come out and murder the benevolent crew and steal the boat.<sup>45</sup>

<sup>42</sup> Osgood, *Notes of Travel* (Salem, 1854), pp. 119-120.

<sup>43</sup> R. O'Shea, *The Sand Kings of Oman* (London: Methuen and Company, 1947), p. 116.

<sup>44</sup> A. Villiers, *SS*, pp. 292-293.

<sup>45</sup> T. Bent, *Southern Arabia* (London: Smith Elder and Co., 1900), p. 279.

Parts of this coast are as dangerous for Europeans as for Arabs, and in some instances more so for Europeans. Even as late as December 1949 on the supposedly peaceful coast of the Aden Protectorate an act of violence occurred against a British-owned yacht. I talked to the survivors several months later in Mukalla. They related how the 110-foot motor launch *Anne Loretta* with an Englishman, his wife, and one Arab crewman was cruising a little off shore when she touched a sand bar. The captain went ashore to lay out a stern anchor and was seized by the Arabs of the local Ardiab tribe on the coast; then his wife and the Arab went ashore to see what had happened and were likewise seized. Several British officials to whom I talked admitted that these two English people came very close to death in the hands of these unpacified coastal inhabitants. The British explanation was that the area was between the Eastern and Western Aden Protectorates where the tribes had not been pacified, and the yacht should never have landed there.

#### IV

Every Arab dhow of ocean-going tonnage has a captain (*nakhoda*), a mate, three quartermasters (or helmsmen), a boatswain, and perhaps a boatswain's mate in addition to the crew. The total complement on a 100-ton ship may be from twenty to twenty-five men, while on a 200-ton ship there will be from thirty-five to forty men. The small coasters of up to 50 tons have crews up to eight or ten; there are no officials on these small craft outside of the *nakhoda*. There is no formal dress on a dhow; often it is difficult to tell the *nakhoda* from the crew, as everyone usually wears simply a loin cloth or the long Arab gown and a head cloth.

A *nakhoda* is much more than the word 'captain' implies; he acts as navigator, pilot, shipwright, sailmaker, ropemaker, agent for buying and selling cargo, agent for freight, agent for recruiting passengers, cashier, bookkeeper, judge, and arbitrator. So completely does the *nakhoda* handle the ship and the ship's affairs that the mate has little to do when the *nakhoda* is aboard. Only when the *nakhoda* leaves the ship does the mate take over; that is the mate's only excuse for existence.

Many of the Kuwait ships on the run to Africa carry carpenters aboard—not as ship's carpenters, but for the construction of small dhows for sale in African waters. Presumably they can sell them profitably in Africa at a price cheaper than the local boatbuilders! However, a small 10-ton dhow that was built aboard the Kuwait *bhum* on which Villiers sailed down the African coast, had to be left on the beach at Zanzibar in charge of a ship's agent, because the dhow could not be sold at the price de-

manded.<sup>46</sup> Few dhows carry ship's carpenters; they hire a carpenter when they need one.

The actual duties of a dhow crew may often begin weeks or months before the voyage starts. If the dhow is new, the first duties of the crew are to rig the ship and make the sails (see Plate 20—top). A boatbuilder furnishes only the hull with masts and yards; fitting out the ship is considered part of the work preliminary to making the voyage, and the sailors do not actually receive money for this preliminary work, as they are paid only when the voyage is over. If they actually need it, the *nakhoda* will give the sailors cash advances; these advances are later deducted from the sailor's share of the vessel's earnings at the end of the voyage. Thus the *nakhoda* fits out his ship at no cost to himself so far as labor goes—the crew actually furnishes it for nothing! Besides this the crew does all the stevedoring on any cargo the dhow may carry, also transporting the cargo in the longboat when required (see Plate 19—bottom).

Arab dhows keep no schedule and know little routine. At sea everyone, including the *nakhoda*, usually loses track of time. Friday, the Moslem day of rest, is not observed at sea, so the sailors work the month around and days come to mean nothing; it is easier not even to try to keep track of them. The only track of time the Arabs keep is the occurrence of Ramadhan, the month when the Moslems fast during the daylight hours. The Arabs know whether Ramadhan is before them or whether it has passed; if it is ahead of them, they keep a very rough idea of how far off it is.

When there is no work, the crew sleeps in a shady spot, if one is available—on the cargo or a pad. All hands turn out day and night for any work. It is not uncommon to see a dhow-load of sleeping sailors pass in broad daylight, but they can be on their feet in a second.

Watches are informal and virtually nonexistent on a dhow. Usually the *nakhoda* keeps watch during the day and the mate or a quartermaster or a boatswain keeps watch during the night. It usually turns out that the helmsman keeps watch, as he is the only man who has to keep awake! The carpenter on a Kuwait ship stands no watches and has few other duties outside of his boatbuilding.

There is a general working period of several hours for all hands every day, usually during the morning. The most essential duty is bailing; the foul bilge water is brought up from a small bailing-well in buckets, and is either dumped into a bailing-trough to flow overboard or dumped overboard via a fireman's bucket brigade. The decks are never washed down, as the water would drain below, through the leaky decks, rather than

<sup>46</sup> A. Villiers, *SS*, p. 268.

overboard, and would have to be bailed out again. Other everyday duties may consist of ropemaking and sail-sewing (see Plate 20—bottom).

Before the sailing duties of the crew can be fully visualized, one must understand how a dhow is rigged. The ocean-going variety is invariably two-masted, although some of the smaller ocean-going craft, that should more properly be classed as coasters, have a single mast. Most large ocean-going dhows can raise a third mast far aft as a sort of jigger if they so desire; this mast and sail are usually borrowed from the longboat. These large dhows never carry this third mast as standard rigging; it is erected temporarily only when needed.

Usually when sailing before the wind large dhows carry only their great mainsails; there is little advantage in raising the smaller mizzen when sailing dead downwind with the mainsail up. However, when sailing downwind in a quartering wind, the mizzen is often raised in addition to the large mainsail. Many of the Indian and some Persian *baghlas* can send up a lateen topsail over the mainsail. Like the ornate carved stern of the *baghla*, which was presumably copied from European galleons, these topsails were probably also copied from the Europeans.<sup>47</sup> It is interesting to note that the *bhum*, which has risen to prominence as an ocean sailer in the last century, apparently never carries such a topsail.<sup>48</sup> The trend among the Arabs is to the least number of sails possible; the Arabs do not consider the setting of a topsail or a jiggermast and sail worth the effort, and few Arabs even carry a topsail.

When going to windward in light airs most large ocean-going dhows can set four sails: the lateen mainsail, the lateen mizzen, the lateen jigger, and a jib. The jib is rigged from the end of a light boom extended over the stemhead. With a big jib on, the jigger will help balance the canvas and ease the steering, but the Arabs still usually consider it too much trouble to set the jigger.

Thus, while some of the large ocean-going dhows have five different sails (main, mizzen, jigger, jib, and topsail) which they can set, they often carry only the mainsail. In adhering to their policy of a few big sails, rather than a number of small sails, the Arabs usually carry three different sizes of mainsails and two different sizes of mizzens. They adjust the size of the main to take care of the wind and try not to set any other sails. However, in light airs, they are often forced to set more canvas, but do it grudgingly.

The mainmast and yard on an ocean-going dhow are nothing less than

<sup>47</sup> R. LeB. Bowen, Jr., 'Arab Dhows of Eastern Arabia,' *AMERICAN NEPTUNE*, IX (1949), Plate 9.

<sup>48</sup> A. Villiers, *SS*, p. 277.



gigantic. The mainmast on a large two-masted dhow is about seventy-five per cent of the overall length of the craft; for a 150-ton dhow it is a massive tree trunk that will tower more than seventy-five feet above the deck and have a diameter of over two feet. The mast is not tapered much, being only slightly smaller at the top than at the bottom. The huge size is necessitated by the fact that, because of the way the Arabs sail, the mast must at times stand unsupported with the sail raised and working. The main yard is equally massive, attaining almost the overall length of the vessel but having a diameter only about one-half that of the mast. The yard is a tapered spar made of stout poles fished and lashed together. On a 150-ton dhow the main yard may weigh over three thousand pounds and the largest mainsail may weigh up to one thousand pounds. This four-thousand-odd pounds of teakwood and cloth is raised solely by manpower using a two-part, twofold purchase.

When the dhow is ready to sail, the longboat must be hoisted and stowed, and the anchors must be raised. In rough weather a large dhow may lay down four or more anchors, as the moorings are usually foul. The anchors are raised to the surface without any tackle, and then they may be brought aboard by a fall from the masthead.

Before the mainsail may be raised on an ocean-going dhow the huge sail must be bent to the massive yard by a series of robands along the whole head. After the sail is bent to the yard, it is secured lightly in stops, so that the yard may be hoisted with the sail neatly furled on it. After the yard is finally mastheaded and the halliards belayed, the sail may be released by a tug on the sheet, which breaks the sail out of the stops. The sheet acts as a rip cord and sends the sail billowing out like a parachute; if the breeze is light, the sail will flutter out like a flag, but if the breeze is fresh, the sail will open with a cannon-like roar. On smaller coastal dhows the sail is not gathered onto the yard in stops, the yard being simply raised with the sail in sailing position.

However, the yard and the sail are by no means raised as easily as one might gather from reading the preceding. As was pointed out above, the yard and sail on a 150-ton dhow may weigh over four thousand pounds and are hoisted by sheer manpower, using only a two-part, twofold purchase. Raising the yard and sail is a great occasion on any dhow, large or small—not by way of celebration, but because it represents so much work. There is a great ritual in hoisting the yard, the ritual becoming more important the larger the dhow. With the order to raise the yard, the sailors start a native song and dance; the pace quickens, and at an appointed place in the singing the sailors fall to the halliards. The halliards are at-

tacked almost savagely as the men chant praises to Allah and stamp the deck as they shuffle by for another chance at the halliard. When the yard, with the sail gathered in stops, is halfway up, the sailors may stop working and go into a dance, snapping their fingers and stamping the deck. On a large ocean-going dhow of 150 tons, it takes a whole hour to masthead the yard—about one-third of which is spent in dancing and singing. On a smaller dhow there is much less organization in raising the sail, but it is usually done faster with less song and dance.

Once the sail is raised and the dhow is under way, the sailors' duties are usually completed for a considerable length of time. However, if the weather changes, the sail may have to be changed. Once under way it may take several hours on a large dhow to lower one sail and replace it with a smaller (or larger) sail. The course may also have to be changed at times, regardless of weather changes. The Arab dhow tacks by wearing while sailing downwind; in wearing all hands have appointed stations, where stays, tacks, and sheets must be shifted.<sup>49</sup>

There is one more important duty carried out semiannually on the great ocean-going dhows running to and from Africa and India: that is cleaning the bottom. The bottom is usually cleaned and refinished before the dhow makes its return trip (from Africa or India) and after it has finished its seasonal trip. The dhow is moved into a shelving beach at high tide, and the ship is lightened as much as possible by the removal of any cargo and its yards, which are lowered overboard. The mainmast is lowered in its gear to the aft of the V-shaped trough in which it rests. Sometimes, depending on the dhow, it is necessary to completely unship the mast; at other times it is sufficient simply to lower it so that its resistance to the wind (and thus its toppling effect) is at a minimum. It should be remembered that the mast on a medium-sized ocean-going dhow is a massive teakwood spar weighing around five tons, while on a large dhow it may run well over ten tons.

When the dhow is lightened sufficiently, it is kedged into shallow water to the songs and chants of the crew laboring on the anchor lines. With the falling tide, mangrove pole props are lashed along the gunwales on each side so that as the tide leaves the vessel dry, it is propped up on stilts. With each successive tide change, the stilts must be carefully reset, as the vessel is partially refloated. To allow a large dhow to topple over is a serious matter, as it may have to lie there until a spring tide lifts it.

When the tide has receded sufficiently, the sailors set to work remov-

<sup>49</sup> For a description of 'wearing' see R. LeB. Bowen, Jr., 'Arab Dhows of Eastern Arabia,' *AMERICAN NEPTUNE*, IX (1949), 122-129.



ing the old paying-stuff with scrapers. After this is removed they immediately start to put on the new compound, a mixture of tallow and lime, in thick layers with the flat of their hands. As soon as the task is finished, the dhow is kedged into deeper water, re-rigged, and is ready to sail. If no planks have to be replaced, this operation should not consume more than two or three days. A unique though rather incredible means of cleaning the bottom of an Arab dhow is recorded by Villiers,<sup>50</sup> who relates that, while becalmed off Oman, the sailors on the *bhum* on which he was sailing dived overboard, and scraped the sea growth off the ship's bottom while swimming slowly from side to side! The *bhum* in this instance was drawing thirteen feet of water.

All work on a large dhow is done by brute strength, and when the crew is working, the pace is very strenuous. All hands carry out orders day and night with the same fanatic vigor—it almost seems as though their lives depended upon the particular task they were doing at the moment. The *nakhoda* plays no favorites; when the tempo becomes too fast, those too old or feeble will drop out or be given a sea burial in a cover of palm fronds. Thus it is easy to understand why, when there is no work, all hands are to be found asleep. Thus have the dhows sailed for centuries on their unhurried voyages, and so they will probably continue for centuries. Of all the crews—Arab, Persian, and Indian—the Arabs from Kuwait attack their work with the most energy, almost fanatically.

At times the large deepwater dhows still have a pomp and ceremony about them that give them a dash of color never to be found in coastal dhows. Whenever coming into a large port that can supply the Arab sailor with the diverse entertainment that sailors of all lands expect after a long voyage, there is a great celebration. This consists of the dance so familiar among male Arabs throughout the Arab world—dull shuffling, agitating, jumping and hopping, accompanied by the loud noise of snapping fingers and moaning music from drums and tambourines. Sometimes the sailors get so wrapped-up in their dancing while entering a port that they are late in executing orders. Quite naturally, the longer a dhow has been at sea and the farther it is from its home port, the greater the celebration.

## V

On even the largest Arab deepwatermen, the crew has no quarters, as there is no 'below'; all hands live on deck, finding the softest place they can. Usually the sailor's clothes—a nightshirt-like gown or a sarong and

<sup>50</sup> A. Villiers, *SS*, p. 298.

a headdress—serve as his bedding. The Arab has not been spoiled by soft mattresses and can get a good night's rest on a floor, deck, or hard ground. The *nakhoda*, the mate, and a few selected passengers live on the poop. Sometimes an awning is spread over the poop to keep the burning sun out, and other times it is bare; sometimes a Persian rug is spread on the poop. There is invariably a cabin beneath the poop for the storage of valuable cargo and ship's stores (see Plate 22—top). This cabin is usually only the space between the continuation of the main deck and the poop deck. Sometimes there are doors leading forward, but more often it is simply open.

As there is no below on a dhow, there are quite naturally no toilets below. Dhows do carry toilets, however, in the form of one-holed privies, hung overboard off the poop (see Plate 21—bottom). They are usually on the port side, but are sometimes seen on the starboard; I once saw a large *sambuk* in Aden with two, one to port and one to starboard. These lack the privacy of a privy, and are almost completely open. Freya Stark<sup>51</sup> had to have the captain rig up a special awning for her when she traveled down the South Arabian coast in a dhow.

When the dhows carry passengers they are packed on the main deck like cattle. Living conditions are not too bad without passengers, but with a load of passengers, conditions immediately become foul. Ordinarily the bilge on a dhow is beyond description, but sanitary conditions become unimaginable with a load of passengers who are so packed in that they cannot all hang over the rail in rough weather. Villiers<sup>52</sup> tells of seeing a small 60-foot *bhum* from Oman sailing down the coast of Africa with about two hundred Omani passengers; it was estimated by the Arabs on Villiers' ship that ten of these would die before reaching Zanzibar. Whenever there is a death aboard, the Arabs conduct a hasty sea burial; deaths are never reported to port authorities by the Arabs, for fear of not being cleared.

Although the Arab aboard ship has little concept of time as far as days go, he divides the day into four periods separated by the announcement of the five daily prayers in which all good Moslems religiously indulge. Prayer time is announced by the *muezzin* (prayer caller), who may be any one of the crew or officers. The *muezzin* simply announces the time of prayer, and bears no similarity to a priest or minister, for the Moslems have none of these; their religion is voluntary. The first sound to fall on Arab ears every day is the raucous call of the *muezzin* perched on some

<sup>51</sup> F. Stark, *A Winter in Arabia* (New York: E. P. Dutton & Co., 1940), p. 314.

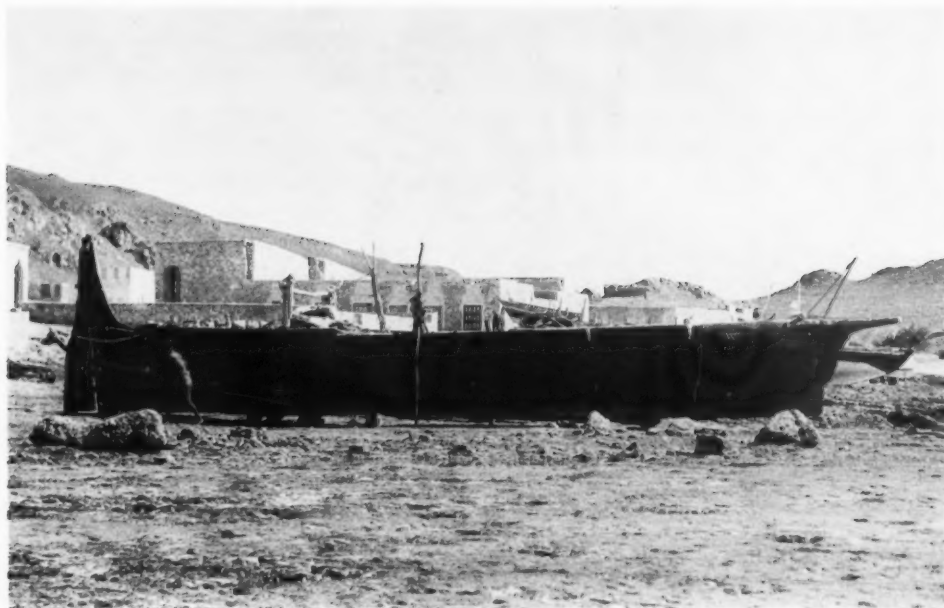
<sup>52</sup> A. Villiers, *SS*, p. 124.



Manama wharf on Bahrein Island, through which comes the entrepôt trade destined mostly for transshipment to Arabia. Shown in the foreground are hides, and in the background bales of cotton and earthenware water jugs



Persian carpets and brass-bound chests are usually carried by the captain as a private venture. Here a Persian captain is attempting to sell some chests to an English woman in Aden



The Omani who coast down to Africa and fish along the way haul their *bedans* out periodically, lay the fish out to dry, and oil the hulls; this one is at Mukalla



Tuna fish drying in the sun at Mukalla. The Omani carry large quantities of dried fish down the South Arabian and East African coasts, coasting down on one monsoon and back on the other

point of vantage. Before every prayer the Arabs first perform the required Moslem ablutions of washing their hands, face, feet, etc., in sea water; then they go through the prayer ritual facing towards Mecca with their headcloth spread in front of them as a prayer rug. It is for determining the direction of Mecca that the compass on a large dhow is often most used! The first prayer is the dawn prayer said in the first greying light of dawn; the morning prayer takes place when the sun is close to the meridian; the afternoon prayer is called when the shadows begin to lengthen; the evening prayer is said shortly after the sun sets; finally, the night prayer ends the day several hours after sunset. The above applies to Moslem Persians and Indians as well as to the Arabs; obviously it does not apply to Hindus or sailors of other religions.

Eating is intimately related to Islamic religion for Arabs and other Moslem sailors, as their three meals come directly after the dawn, the morning, and the evening prayers. In the month of Ramadhan all faithful Moslems neither drink nor eat during the daylight hours; however, during Ramadhan all activities on land and on sea usually hit a low ebb. In other months breakfast consists for the Arabs of little more than a piece of unleavened bread with some sweet tea or water with which to wash it down. Lunch has more to offer, consisting of a mess of boiled rice with a flavoring of *ghee* (clarified butter) and curried or baked fish (if the ship has any fish aboard). The main portion of the meal is rice, which is served on a huge tray, or often simply on a palm leaf mat. The crew gathers around several of these trays or mats and makes quick work of the food, using no implements other than their right hand. They take a little fish (or meat if they are that fortunate), ball a small handful of rice around it and toss the ball deftly into their mouth, usually without losing a crumb. Nothing is ever wasted, as someone always scavenges the last morsel. Supper is essentially the same as lunch.

Often a feast is in order in port; this always calls for the slaughter of a sheep (or goat), a number of which are always kept alive on board. The sheep is usually slaughtered at dawn and is virtually dragged from its skin into a large iron pot, where it is boiled in water. The sheep or goat is the *pièce de résistance* and is served whole on a huge tray of rice. For a feast, a curry flavoring or raisins are often mixed with the rice. Various delicacies from the sheep, such as the heart, liver, lungs, and kidneys, are cooked separately and served in side dishes. As the feast starts, the sheep is methodically torn apart limb from limb and fiber by fiber. The meat is always eaten in the same manner: rice is balled around small bits of meat and tossed deftly into one's mouth with the right hand. In pulling



apart the sheep only the right hand may be used, as the Moslem left hand is reserved for less sanitary duties.

Towards the last of the feast, the host seizes the head, rips out the tongue, gouges out the eyes, removes the brain by smashing the head on the floor, and tosses these delicacies on the plates of the guests of honor. To one unaccustomed to the ways of the East, such a scene might look primitive and barbaric, and might remind one of a pack of animals crouched around their prey. It is true that the Arab meal lacks the decorum of a Western table and one needs more than a finger bowl when finished, but once one is accustomed to the Arab way of life, an Arab feast is most satisfying! Before and after the feast one is served the ubiquitous too-bitter Arab coffee and too-sweet tea. Often during the regular day, coffee and tea break the long hours between meals.

Villiers made a very careful survey of the food consumed for 270 days on a Kuwait *bhum* by the thirty men aboard. The total cost was 1502 rupees, which was an average of about 5.5 American cents per man per day (at a rate of exchange of \$0.30 per rupee). Villiers' summary of the food consumption is as follows:<sup>53</sup>

Commodity	Cost per Unit	Number of Units	Total Weight <sup>54</sup>	Total Cost Rupees
Dates	3 rupees/package	40	3360 lbs.	120
Rice	8-10 rs/bag	53	8900	500
Flour	6 rs/bag	12	1800	72
Sugar	12 rs/bag	7	1570	84
Dried fish			500	40
Dhall (Indian Corn)	15-16 rs/bag	6	1010	90
Salt	2 rs/bag	3	670	6
Tea			110	50
Coffee			220	30
Ghee (clarified butter)	10-20 rs/tin	9	360	120
Saleet (oil)			400	50
Pickled stuffs			100	50
Chilis			80	10
Onions			1600	50
Potatoes			480	30
Cloves (for coffee)			40	5
Ginger (for coffee)			100	5
Tomato essence			40	15
Canned milk			150	20
Sesame seeds (for bread)			30	5
Lady-fingers and peppers				5

<sup>53</sup> Ibid., p. 427.

<sup>54</sup> These weights were estimated by this author, using the average weight of the units, i.e., packages (of dates), bags (which vary for every commodity), tins, etc., that were in common use in Aden in 1950.

White radishes	100	5
Lemons	40	5
Other fresh vegetables	400	15
10 live sheep	1100	40
15 live sheep and goats	1500	80
	Total Rs. 1502	

It should be noted that rice constitutes one-third of the cost. The other great staple at sea—fish—is not listed accurately, as most of it is caught fresh; probably between two thousand and three thousand pounds of fresh fish was eaten. It should also be noted that no charge occurs for water. The dhow will take a tank of bad water rather than pay for it.

The Arab dhow, regardless of its size, always has a fish-line overboard, and it is not uncommon to see half a dozen lines overboard. I have caught many fish myself trailing a line from a dhow in the Persian Gulf. Villiers<sup>55</sup> states that fishing off the whole African coast is particularly good and that it is not uncommon for the many lines trailed from a Kuwait *bhum* to net twenty to thirty large fish a day. The fish not eaten are cleaned by splitting, are pounded in salt, and then hung in the sun to dry; the sailors never bother to scale the fish.

The galley on an Arab dhow is simply a spot on the deck. The stove consists simply of an open-sided box with some sand and cooking stones on the bottom (see Plate 21—top left). The larger the dhow the larger the fire-box. The cook cooks everything here with wood fires of palm wood, brush, or driftwood.

On dhows of South Arabia and the Gulf of Aden ports there is also a bread oven. I have never seen these on dhows from the Persian Gulf or Gulf of Oman. The oven consists of a wide-mouthed pot perhaps fifteen or eighteen inches in diameter; this pot is put inside a barrel about two and one-half or three feet in diameter and the space around the pot is filled with sand (see Plate 21—top right). The barrel is firmly lashed together and then is usually securely lashed to the deck. To bake bread, the cook builds a fire in the bottom of the pot and allows it to burn down to the coals. Then he takes a flat piece of dough like a large pancake and pastes this on the inside of the pot; the heat in the walls of the pot and the coals bake the bread. This is the Arab *khubuz*, one of the staples of the Arab at sea as well as on land.

## VI

It is difficult for one totally unfamiliar with the Arab East to understand the economic system of the Arabs. The tenets of Islam prevent any

<sup>55</sup> A. Villiers, *SS*, p. 130.

banking system, interest, usury, or insurance. The economy of the Arabs is built on a tremendous pyramid of debt which has the lowly sailor, fisherman, farmer, and coolie on the base and a sheikh on top; this system, which may well be called the 'debt system,' operates efficiently and effectively, but has been notoriously overworked in the case of pearling activities in the Persian Gulf.

At the start, a merchant will finance a *nakhoda* for building a deepwater dhow.<sup>56</sup> Thus the *nakhoda* is the nominal owner of the dhow, but he is indebted to the merchant. If the *nakhoda* had enough money to buy a dhow himself, he would finance someone else and become a merchant himself. This arrangement suits the merchants, for if the ship goes down, the *nakhoda* (or his family) must pay back the value of the cargo and the cost of the dhow as well. Thus the merchant has an 'insurance' on his investment. A merchant may have a dozen *nakhodas* so indebted to him.

The *nakhoda*, on the other hand, has all his sailors and crew indebted to him. He never pays them any regular wages, but gives them advances of food and money when they need it. Thus, as we saw above, the sailors have to make the sails and rig a new ship if they are to sail it. Only when the voyage has terminated six months or a year later, and the ship has been beached in the home port, do the sailors get their share of the earnings of the voyage. But by this time many of them have no share coming, as the *nakhoda* usually has advanced them more than their share amounts to, so he must give them another advance; this is to the *nakhoda's* liking, as he then has the sailors indebted to him. Once a sailor owes a *nakhoda* money, the sailor cannot ship with another *nakhoda* until the debt is paid. The sailors pay for only half of what they eat, for when it comes to the final accounting (if such a civilized term can be applied to the figuring), the total food cost is subtracted from the gross earnings.

The *nakhoda* receives about four or five times the sailors' share, while the mate receives about half as much as the *nakhoda*; some members of the crew receive a little more than the common sailors. The shares received by the twenty-seven men eligible for shares on the Kuwait *bhum* on which Villiers<sup>57</sup> sailed in 1939 are as follows:

	Value of Share	Number of Shares	Total Shares
<i>Nakhoda</i> (captain)	5	1	5
<i>Mu'allim</i> (mate)	3	1	3
Quartermaster	1½	3	4½

<sup>56</sup> Not everyone can become a *nakhoda*, for the *nakhoda* must come from a family which can pay the debt if the *nakhoda* should be unable to.

<sup>57</sup> A. Villiers, SS, p. 425.

<i>Serang</i> (boatswain)	1½	1	1½
<i>Serang's</i> mate	1¼	1	1¼
Cook	1½	1	1½
Steward (storekeeper)	1¼	1	1¼
Sailors	1	18	18
Total shares			36
<i>Nakhoda's</i> extra 4 and mate's extra 2 shares			6
Net shares for crew's half of dhow's earnings			30

The *nakhoda's* four and the mate's two extra shares are taken from the ship's part of the earnings. On the voyage that Villiers made, the ship grossed 9,600 rupees and spent some 1,500 rupees on foodstuffs; this gave a net earning of 8,100 rupees. Half of this was considered the crew's share for the voyage, so the thirty shares were worth 135 rupees each (after the *nakhoda's* and the mate's extra six shares were deducted from the total shares). The ship's expenses and upkeep, as well as the *nakhoda's* and the mate's extra shares, came from the dhow's earnings; the balance went to the merchant financing the vessel. If we assume that the yearly upkeep of the dhow was 1,000 rupees (which it never would be, as the crew does all the work on their share of the earnings), the owner's share on his investment of 12,500 rupees (the total original cost of the completed dhow) was 2,240 rupees, or approximately eighteen per cent. However, this is probably closer to twenty per cent, as the yearly upkeep probably did not run over 500 rupees. This would not hold up under strict accounting, as no depreciation has been charged off. Also no insurance on hull or cargo was carried as there are few if any Arab insurance firms. However, when Arab craft make return trips from India they usually insure the cargo with an Indian firm.

Villiers<sup>58</sup> estimates that the sailors might have netted twenty rupees extra in their own trading, that the mate might have made several hundred, while the *nakhoda* might have made a thousand rupees in his deals—mostly from Persian rugs and carved chests. Thus the owner received a twenty per cent return on his investment for the year, while the sailors received about 150 rupees (\$45.00) then for a year's work. That seems rather unbalanced, does it not?

I have found the same general system of shares applying to pearling and fishing activities as well as to mariners in the Persian Gulf, the Red Sea, and along the coasts of South Arabia. In general, however, it is more

<sup>58</sup> Ibid., p. 426.

clean-cut in Villiers' case, as all the shares of the *nakhoda* and the mate come from the crew's half of the net earnings. On the 240-ton *sambuk El Wafi*, which I boarded in Aden in 1950, the shares were as follows:<sup>59</sup>

	Value of Share	Number of Shares	Total Shares
<i>Nakhoda</i> (captain)	4	1	4
<i>Serang</i> (mate)	2	1	2
<i>Sukkani</i> (quartermaster or helmsman)	1½	3	4½
<i>Muqaddam</i> (boatswain)	1¼	1	1¼
<i>Katib</i> (clerk)	1½	1	1½
<i>Wakil</i> (steward)	1¼	1	1¼
<i>Bahri</i> or <i>mallah</i> (sailors)	1	33	33
Total shares			47½

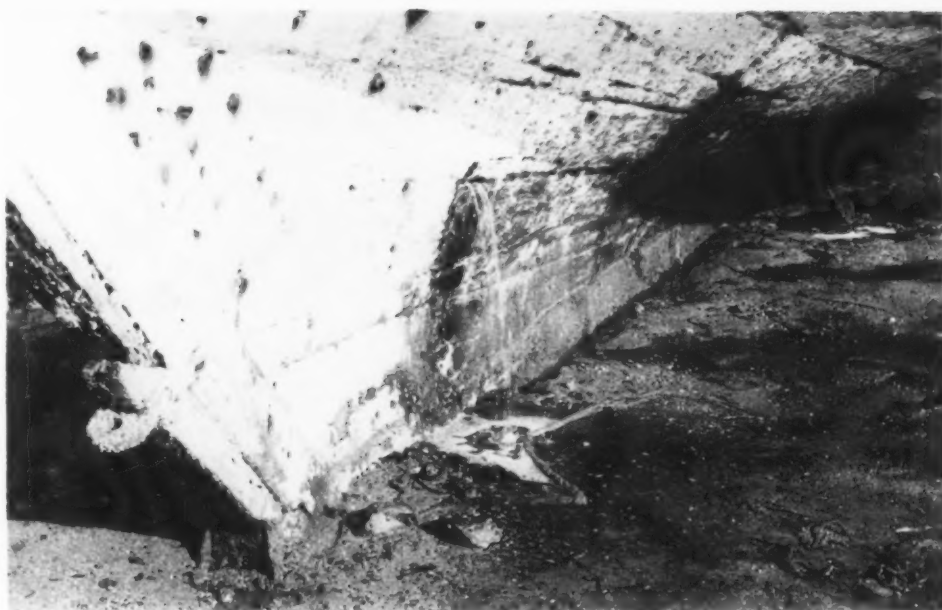
In India some crews are paid on a salary basis, but many others work on a share basis. However, in India the owner takes one-third of whatever the ship earns. Then the craft's expenses while she was at sea and the supplies for the crew are deducted from the remaining two-thirds; the remainder is then divided among the captain and crew according to shares.<sup>60</sup> By dividing the profits in this manner the Indian owner gets about a quarter less than the Arab, while the Indian crew gets about ten per cent more.

The largest importer and exporter in Aden, and probably the whole Gulf of Aden for that matter, is A. Besse and Company, operated by a shrewd Frenchman, Mr. Antone Besse. Among Besse's various holdings in the Middle East are twelve dhows, all registered in Aden. The *El Wafi* was one of the twelve *sambuks* owned by A. Besse, and operated in the Gulf of Aden and the lower Red Sea. On the average these dhows made four trips a month. The *nakhoda* was given advances, which he in turn gave to the crew, before each trip. After four trips the gross return for

<sup>59</sup> It will be noted that the Arabic names in Villiers' list of the members of the crew on a Kuwait *bhum* and in my list of the members of the crew of an Aden *sambuk* are not the same; however, this does not mean that either is necessarily wrong. The Arabic names on my list were checked from three independent sources in Aden, and my informants in Aden recognized Villiers' *mu'allim* as the word the Kuwaiti used for 'mate.' Villiers indicated on his list 'quartermaster' but did not give the Arabic for the word. The Arabic word that I found in use in Aden for this member of the crew was *sukkani*, which comes from *sukkan*, the Arabic for 'rudder.' Thus it would seem that the more proper translation of the word is 'rudder-man' or 'helmsman,' although his position on the dhow is really that of 'quartermaster.' The word *muqaddam* is the word commonly used on land to refer to a 'headman' who is the leader of any other group of working-men. However, on a dhow the *muqaddam* is the man who superintends the letting go and the weighing of the anchor, so the translation of the word when applied to seafaring men is properly 'boatswain.' The important fact evident from the two lists is that there is always a consistency in the top officers of a dhow—there are a captain, a mate, three quartermasters (or helmsmen), and a boatswain, irrespective of the Arabic name by which they are known.

<sup>60</sup> K. B. Vaidya, op. cit., p. 41.





The dhow is usually not a very seaworthy craft. The photograph shows bilge water leaking through weak seams in the bottom of a large dhow drawn up on the beach



The crew usually does all the stevedoring. The photograph shows the crew of an Aden dhow loading the undecked craft for a trip to Djibouti. The cargo remains unprotected from the weather



The crew that is to sail a new dhow must rig the ship and make the sails first.  
The photograph shows a set of sails being made at Aden



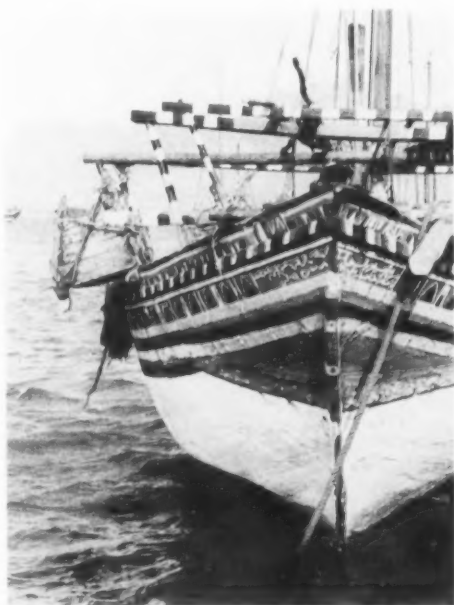
Rope making is one of the odd jobs that crew members perform. Here an old  
sailor makes some rope using his toes as well as his hands



The galley on a dhow is on deck;  
the stove is an open-sided box



An oven on a dhow (to the right of  
the water drum), made of a wide  
mouth pot put inside a barrel of  
sand



The toilet on a dhow is simply an  
open privy hung overboard



The toilet on a large dhow as seen  
from below



There is usually a cabin under the poop, formed by the space between the poop deck and the extension of the main deck. Note the man on the poop for an estimate of size



The poop is usually cluttered up with sailors' chests, filled with cheap goods for trade. Note the binnacle, the only navigation instrument on the dhow, a large *baghla*

the cargo the dhow had hauled was figured and the cost of the food consumed by the officers and crew was deducted, giving the net earning of the dhow. One-half belonged to the crew and was divided into forty-seven and one-half shares as shown above. The other half belonged to the owner, and represented his return on his investment; the owner had to maintain the dhows from his half of the earnings. As we saw above in the case of the figures presented by Villiers, the owner has little to deduct from his share of the ship's earnings, so his return on his investment is considerable. It is little wonder that Mr. A. Besse was recently able to give Oxford University a contribution of £2,000,000!

Over one hundred years ago, the French Admiral F. E. Paris spent considerable time in the waters around Muscat and wondered how Arab ships could at that time compete with the more efficient European sailing ships. Paris summed up his conclusions as follows:

... les Arabes qui les montent habitués au retour périodique des moussons, n'exécutent, en general, qu'un voyage par an ... [ils] entendent bien le commerce; malgré cela, ils sont rarement employés par les Européens ... et, comme ils ne prennent que de très-faibles cargaisons, ce n'est que grâce à l'extrême économie des Arabes qu'ils peuvent servir pour le commerce.<sup>61</sup>

Only a decade ago, one hundred years after Paris, men of other lands were still wondering how an Arab sailing fleet could possibly survive in the present era of oil and steam; to satisfy his curiosity Alan Villiers dedicated a year of his life to sailing with the Arabs in their dhows. Villiers has summed up the reasons for the survival of the dhow fleet as follows:

One reason—perhaps the chief—why the ancient trade with the monsoons down the Indian Ocean not only survives but flourishes is that the dhows warehouse the goods they carry as well as transport them, and it suits the merchants better to have 10,000 packages of new season's dates divided among a fleet of dhows, than in the hold of one steamer which will unload the lot in a day or two, and flood the market. Ten thousand packages provide cargoes for at least five large dhows; the dhow master does not care how long he takes to discharge his cargo, for his overheads are trifling, his crew works on shares and handles all cargo, and his vessel pays practically no port dues.<sup>62</sup>

While in Aden in 1950, the writer investigated the intriguing problem of dhow economics, as applied to the coastal craft operating around

<sup>61</sup> F. E. Paris, *Essai sur la Construction Navale des Peuples Extra-Européens* (Paris, Bertrand, [1841]), p. 9. '... the Arabs who man them, accustomed to the periodic reversal of the monsoons, carry out, in general only one voyage a year ... they understand commerce well; in spite of that, they are rarely employed by Europeans ... and, as they carry only very poor cargoes, it is only because of the extreme economy of the Arabs that they can be of use for commerce.'

<sup>62</sup> A. Villiers, 'The Arab Dhow Trade,' *Middle East Journal*, II (1948), 400-401.



Aden. The twelve dhows mentioned above and owned by Besse have a gross tonnage ranging from 53 to 446, with an average gross tonnage of 181 and an average capacity of 150 tons. Six of the larger dhows have auxiliary diesel engines but the other six have none. Although engines might seem to conflict with the fatalistic attitude of the Arab sailor, the Arabs manage their engines very well. A summary which Mr. A. Besse furnished the author of the gross and cargo tonnage of his twelve dhows, all of the *sambuk* class, follows:<sup>63</sup>

<i>Name</i>	<i>Gross Tonnage</i>	<i>Capacity-Tons</i>
<i>Dawood*</i>	446	400
<i>Galood*</i>	330	300
<i>Wafi*</i>	240	190
<i>Lateef*</i>	225	200
<i>Nufeed</i>	189	180
<i>Masheet</i>	170	140
<i>Essid*</i>	136	90
<i>Nuthel</i>	118	95
<i>Henkhles*</i>	112	70
<i>Kaid</i>	75	70
<i>Karn</i>	73	70
<i>Dharif</i>	53	50
Average	181	150

\* Indicates auxiliary diesel engine installed.

A. Besse sends these dhows to Mukalla (see Plate 23—bottom) and Shihr on the Hadhramaut coast; to Hodeida, Luhaiya, and Maidi in Yemen; to Qizan in Saudi Arabia; to Kamaran Island; to Massaua and Assab in Eritrea; to Djibouti in French Somaliland; to Zeila and Berbera in British Somaliland; and to Bender Cassim in Italian Somaliland. The most distant of these ports (Massaua) is about 450 miles away from Aden, while the nearest (Djibouti) is only 150 miles from Aden. The dhows operating in this 450-mile range from Aden average about four trips a month, and carry merchandise destined mainly for branches of the Besse empire, but also carry any other cargo they can obtain.

The Besse dhows have been known to make occasional trips as far away as Port Sudan and Jidda in the Red Sea (about 800 miles from Aden) and

<sup>63</sup> While the two sets of figures are not consistent in relation to each other, they do give an excellent general picture of the relative tonnages. In Besse's office on the Maala waterfront in Aden there was a large blackboard with the dhow names painted down the left-hand side and space to the right for information about their cargoes, port of destination, ETA's, etc. In the middle of the dhow list, a name had been scratched from the list. This represented a 150-ton dhow that had gone down in the Gulf of Aden in a storm; it had sailed out of Aden and has never been seen or heard from since. The dhow manager explained that the dhow had not been made in Aden, but in Africa, and was very weak; as an actual fact the other dhows belonging to A. Besse have a reputation for being the strongest-built dhows in the local waters.

Mogadiscio in Italian Somaliland (over 1,200 miles from Aden); to various Indian ports, which are between 2,000 miles (Karachi) and 2,500 miles (Bombay) from Aden, Besse's dhows have been known to have made an occasional trip.

The point of all this is that Besse has found it profitable to operate his dhows within a 450-mile radius of Aden, but no farther (see Figure 4).

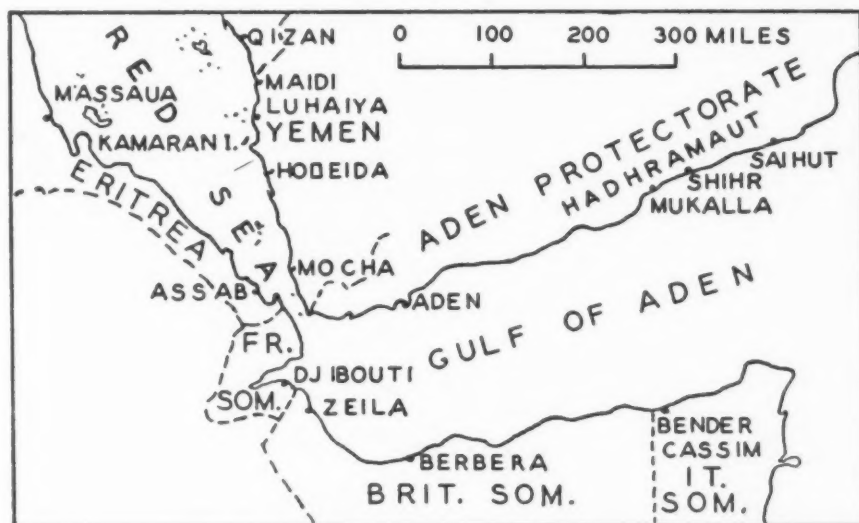


Fig. 4. Map of the southern Red Sea-Gulf of Aden area

The same is true of dhows from other ports in the area, for one finds Aden full of dhows from the same ports to which Besse sends his dhows, but few from ports farther away. Thus it seems that dhows can operate economically to and from Aden within a 450-mile radius. However, more cargo goes out of Aden by dhow than comes in by dhow, and many of the dhows from Yemen and the Somalilands come to Aden empty in the chance of picking up cargoes (see Plate 23—top). It should also be noted that most of Besse's dhows return to Aden empty after delivering their cargo in the 450-mile radius. The above does not apply to the deepwater ships coasting down from Arabia to Africa, as these ships make only one trip a year. The above case for Aden applies only to coasters which make a number of trips a year, always returning to their home port (in Aden or the 450-mile radius).

Vaidya<sup>64</sup> has estimated that in 1944 there were about 5,300 sailing

<sup>64</sup> K. B. Vaidya, *op. cit.*, p. 17.

craft on the west coast of India engaged in coastal trade over the one thousand-mile coastline. These vessels averaged only about forty tons and carried on the average eight-man crews. It is extremely interesting to note that Vaidya<sup>65</sup> concluded that these vessels never made voyages to ports over four hundred to five hundred miles away, always staying within a five hundred-mile radius of their home ports. The only vessels that made longer trips were the larger craft from the Gulf of Cutch and the Sind coast, these craft carrying Indian trade to Africa, Arabia, and the Persian Gulf. Thus in India the same economic balance that is found in the Gulf of Aden governs the coastal trade. These coastal craft would rather return home in ballast than travel out of their arbitrary 'zone' for a cargo.

Admiral Paris thought that the dhows could exist in the face of more efficient European sailing ships only because of the extreme economy of the Arabs. Villiers thought that the main reason the deepwater dhow could still exist in large numbers in the present day of steam was in the main because of the date-storehousing ability of the dhow, which did not tend to flood the market with dates. However, as we have seen above, the 1949 crop of dates entered Aden under steam, rather than on Kuwait dhows.

No, the answer to the question is of a more fundamental nature than either Paris' or Villiers' reason. It is this writer's opinion that the main and only reason why deepwater dhows can survive in this day and age is the system of sailors' wages—the 'debt system.' The Arab capitalists' philosophy is 'Get a man in debt and then never pay him enough to get out of debt.' Certainly this is true about the deepwater Arab craft that sail from the Persian Gulf and the Gulf of Oman to Africa; the crews are paid once a year, so that by the time they do receive their pay the advances made to them usually consume most of their wage. This would tend to be less true if the sailors were paid more frequently. It is interesting to note that A. Besse operates his coastal dhows under the debt system and shares, paying off only once a month and giving out liberal advances in between to keep the sailors in debt.

However, this is not the most important factor keeping the large number of coastal craft operating in areas like the Persian Gulf, the Gulf of Aden, the Red Sea, and the west coast of India. These coastal craft provide a very valuable service by moving cargo in small amounts to ports not usually visited by steamers; steamers find it uneconomical to make short hauls of small cargoes. However, what may be considered a small cargo for a steamer may fill several dhows. In many instances these coastal

<sup>65</sup> Ibid., p. 103.

craft furnish the only transportation to many small off-the-track ports. In addition to this it must be remembered that the dhow (or other native coastal craft) can navigate shallow harbors and creeks, while a steamer could not get closer than several miles. Thus there will always be a place for these short range coasters. However, the future of the deepwater dhow is another question.

The debt system has worked for centuries to the economic advantage of those financing the dhows, and to the economic disadvantage of those working on them. It has been impossible for the sailors to break away, as they can never work for another *nakhoda* when in debt to one. There is only one way to break away, and that is to pay the debt. Becoming a farmer or a fisherman does not help, as they usually operate under the debt system also.

On its face in such a financial set-up the merchant has everything to gain and absolutely nothing to lose. In the case above (where the shares, and thus the sailors' wage, were worth about 150 rupees and the merchant made eighteen per cent on his investment on the dhow), if the dhow had made only one-half of what it had, the merchant would still have received about ten per cent on his investment, but the poor sailors would have received only 75 rupees (\$22.50) as a year's wage. Thus the dhow can compete against steam only at a sacrifice of the unfortunate economic slaves sailing the dhow. The dhow sailors do all the stevedoring, maintenance work, and sailing for their lowly share of the dhow's earnings; if the sailors received a decent wage (even if only on Eastern standards), the deepwater dhow could not stay afloat as a cargo vessel. Coastal craft operating short distances do pay higher wages on the average than the deepwatermen.

However, the advent of the large oil companies in the Middle East has provided a means wherein the sailors can escape from the bonds of economic slavery. By making jobs which pay good money (on Eastern standards) dhow sailors are able to free themselves of their debts and become free men. We have seen above that the oil companies in Saudi Arabia and on Bahrein Island have decreased the number of boats the pearl fisheries can send out, as they cannot get divers to work for the wage they can offer. Kuwait has long been able to keep a large deepwater cargo fleet of *bhums* on the waters around the Indian Ocean because Kuwait had a surplus of cheap labor—there was little else to do in Kuwait besides work in marine activities. Now that the Kuwait Oil Company has made jobs available to the local Arabs, the cheap labor market is gone for the Kuwait *nakhodas*. Thus as the standard of living is increased and cheap labor

becomes no longer available, the deepwater dhow is doomed. The dhow cannot operate in competition with steam if it has to pay the sailors respectable wages; that is, as long as the merchants demand one-half of the dhow earnings.

While traffic in human cargo is virtually a thing of the past, the dhows that coast along the Arabian, African, and Indian shores still have slave crews on them. Although not owned bodily, the crews are bound economically to their masters, the *nakhodas*, while the *nakhodas* themselves are economic slaves of the merchants. But, while the crews get little actual compensation when the pay-off finally comes, they are happy and well-fed and have known nothing else. Allah is compassionate, and there is always a Paradise waiting for their poor souls!





Dhows in the native anchorage at Maala in Aden. The large *baghla* in the foreground is discharging its date cargo with its longboat, the crew acting as stevedores



Dhows in the harbor at Mukalla at dusk. A *bedan* from Oman (with its sail up) is just slipping out of the harbor on its way down to Africa



*Pitcairn as a half-brig*  
*Photograph by Review & Herald Publishing Association*



## Pitcairn, *Missionary Packet*

BY JOHN LYMAN

THE South Sea missionary activity of the Seventh-day Adventist Church began with John I. Tay (1830-1892), who went to sea at the age of sixteen. His interest in Pitcairn Island stemmed from a book, *The Mutiny on Board the Bounty*, which was presented to him as he left home. During the Civil War, while serving on the U.S.S. *Housatonic*, his attention was again drawn to Pitcairn by a conversation with a shipmate who had visited the island. Tay afterward settled in Oakland, California.

In 1883 or 1884 he met the master of *Ocean King*, who had recently stopped at the island, and who spoke highly of the character of the inhabitants. Tay's interest thus reawakened, he determined to visit Pitcairn and present the doctrines of Seventh-day Adventism to the people. In 1886, having to make a sea voyage for his health, he shipped as carpenter in the barkentine *Tropic Bird*, receiving no pay in return for being allowed to keep Saturday, his books being taken as freight. *Tropic Bird* left San Francisco on 1 July 1886 and arrived at Tahiti via Taiohaie on 29 July.

While Tay was at Tahiti trying to find passage to Pitcairn, H.M.S. *Pelican* put in en route there. He was accepted as a passenger by her captain, and arrived at Pitcairn on 18 October. Although a regulation of the islanders prohibited outsiders from remaining, they held a meeting, took a vote, and decided in his favor. A majority of the inhabitants deciding to observe Saturday according to Tay's teachings, the minority agreed to fall in line to preserve the unity of the island community. Tay left the island for Tahiti and the mainland in the yacht *General Evans* on 22 November.

When news of Tay's work in Pitcairn reached the parent church, there was a great deal of enthusiasm among the Adventists of California, and their Conference in October 1887 passed a resolution that the church purchase a missionary ship to carry on the work among the islands. The General Conference in November voted \$20,000 for the construction or

purchase of a suitable vessel, to be ready in 1888; but later in the meeting, when it was pointed out that some of the existing missions were in distress for lack of funds, the matter was reconsidered and postponed until the next Conference.

In April 1888 the General Conference voted to send Tay and Elder A. J. Cudney of Nebraska back to Pitcairn. Cudney took passage in the bark *Sonoma*, from San Francisco to Honolulu where, finding no vessel bound for Pitcairn, he accepted the offer of a church member there, N. F. Burgess, to buy a small schooner then up for forced sale. The vessel, *Phebe Chapman* of 45 tons, was bought for \$1100, Cudney spent \$900 getting her ready for sea, and she left Honolulu for Pitcairn on 31 July, via Tahiti, where Tay was to be picked up.

Tay meanwhile sailed from San Francisco for Tahiti on 5 July by the regular packet, and waited there six months for Cudney to appear in *Phebe Chapman*. While waiting he sought to be taken to Pitcairn by the Chilean gunboat *Angamos*, and the brig *Nautilus*, but was turned down both times. He attributed this to the influence of the Catholic bishop of Tahiti. *Phebe Chapman* had been fitted with a large deck house, and had sand for ballast, with her hold full of furniture. Tay was very dubious as to her seaworthiness when he heard this; and Captain Turner of San Francisco, who was passing through Papeete, expressed the opinion that she was already at the bottom of the sea. Tay waited at Papeete until January 1889 and then returned to San Francisco in the brig *Tahiti*. Cudney left a wife and two small sons.

In November 1888 the General Conference voted to raise \$12,000 to buy or build and equip a suitable vessel for missionary work among the islands of the South Seas, the vessel to be ready early in 1890. The following year the International Sabbath-School Association recommended that the Adventist Sabbath-Schools pledge their missionary contributions for the first six months of 1890 toward the cost of the vessel. With funds now assured, a building committee, consisting of C. H. Jones and J. I. Tay of Oakland and C. Eldridge of Battle Creek, was appointed on 9 November 1889, and immediately set about procuring a vessel. Upon deliberation it was decided to build a vessel of about one hundred tons, and after visiting shipbuilders on both coasts and comparing estimates and specifications, they entered into the following contract:

#### CONTRACT

THIS AGREEMENT—Made this 22d day of April, A.D. 1890, by and between the Seventh-day Adventists' Missionary Ship Committee, represented by C. H. Jones

and J. I. Tay, residents of the city of Oakland, County of Alameda, State of California, party of the first part, and Matthew Turner, resident of the City and County of San Francisco, State of California, party of the second part:

## WITNESSETH:

That the party of the second part agrees to build for the party of the first part a schooner according to the following specifications, which specifications are hereby made a part of this contract:

**SPECIFICATIONS**—Of material, and manner of building a schooner of about 120 tons, government measure, 100 feet long, 27 feet beam, 10 feet depth of hold.

**Timber**—Where not otherwise specified, shall be of good Puget Sound pine.

**Keel Post**—One piece 12 x 16, not including shoe.

**Stern Post**—Hard wood. Stern knee, 12", mold 16". All kevels, jaws, and saddles to be of hard wood.

**Deadwood**—Side 12", and mold of sufficient depth to receive heel of cants; fastened with 1" galvanized iron.

**Frames**—Placed 26" apart from center timber, side 8", mold 11" at keel, and 6" at deck, fastened to keel with one  $\frac{7}{8}$ " bolt to each frame. Cants fastened to deadwood with two  $\frac{7}{8}$ " through-bolts to each cant and clinched.

**Keelson**—Side 12", mold 16", fastened with two 1" bolts to each frame. Bolts driven from top of keelson to within 2" of bottom of keel.

**Ceiling**—From keelson to near floor timber heads 3", fastened with spikes; then 5 strakes  $4\frac{1}{2}$  x 10"; from thence to deck 4", fastened with sufficient spikes to work the plank, and two  $\frac{3}{4}$ " bolts to each frame.

**Pointers**—One set forward about half depth of hold, with good throat knee, and if desired a beam across at aft end, well kneed and fastened with  $\frac{7}{8}$ " iron.

**Clamps**—4 x 10 worked onto the ceiling, and fastened with two  $\frac{3}{4}$ " bolts to each frame. Bolts driven from outside of frame and clinched on inside of clamps.

**Counter Timber**—Side 8", and fastened to transom of proper size, with one  $\frac{7}{8}$ " bolt to each timber.

**Outside Plank**—Garboard strakes 4" thick, all other outside planks 3" thick, fastened with galvanized iron spikes and butt bolts, and locust treenails below the water line. From water line to deck locust treenails and spikes. Treenails to go through and wedged both sides. Heads of spikes counter sunk and plugged.

**Windlass**—Patent, 20" of good hard wood, properly ironed.

**Rudderstock**—Of oak, 10" in diameter.

**Masts**—Mainmast, extreme length 80 feet from keelson to cap; diameter 17,  $13\frac{1}{2}$ ,  $10\frac{1}{2}$ ,  $9\frac{1}{2}$ ". Foremast, length 79 feet, diameter 17,  $13\frac{1}{2}$ ,  $10\frac{1}{2}$ ,  $9\frac{1}{2}$ ". Topmasts of proper proportions. Bowsprit 17 feet length, diameter 16", 13". Jib-boom to be separate from bowsprit and to extend 4 feet outside of fly jib-stay. Booms and gaffs of proper proportions suitable for the south seas. One square sail-yard to run on wire



rope forward of the foremast, length about 45 feet, with due proportions as to weight. Iron for leg-of-mutton sail.

*Rigging*—Of wire, corresponding to that of vessels of her class.

*Deck Beams*—Partner beams 8 x 12", others 8 x 10", fastened with two 7/8" bolts to each end of every beam. Partner and hatch beams to hanging knees well fastened.

*Stanchions*—One to each frame, when not otherwise supported.

*Plankshear*—4" thick, fastened with one inch bolt to each stanchion.

*Bulwarks*—1 1/2 x 3 1/2, tongued, grooved, and beaded.

*Bits*—Of close straight-grained timber. Five rails of usual size.

*Hatch-Combings*—7" thick, and 10" above deck.

*Deck Plank*—3 x 4", grain laid vertically, fastened with 6" spikes, countersunk and plugged.

*Calking*—3 threads outside and 2 in the deck seams, pitched, leaded or cemented, according to position or place.

*Painting*—Three coats of paint on the outside.

*Steering Gear*—Diamond Screw or Centennial patent steering gear.

*Davits*—One set iron.

*Awnings*—Stanchions for full set of awnings.

*Binnacle*—Neat binnacle in the cock-pit.

*Closets*—Two patent water-closets in cabin, and one on deck, common.

*Paint-Locker*—One bath-room, cabin, state-rooms below deck, companion-way, skylights, ladders, and stairway, as per diagram submitted by J. I. Tay.

*Forecastle*—With 10 berths.

*Name*—Carved on stern and quarter-boards. Name to be of lawful size and letters gilded.

*Model*—The vessel is to be built according to the last model submitted to the committee by the party of the second part.

*Superintending*—It is understood and agreed that J. I. Tay is to represent the party of the first part in superintending the construction of said missionary ship.

*Time to Deliver*—The party of the second part agrees to deliver said schooner afloat in San Francisco Bay, tight, staunch, and complete in hull, spars, and iron work, on or before July 31, 1890.

*Cost*—In consideration of the faithful performance of the articles herein contained by the party of the second part, the party of the first part agrees to pay to the party of the second part the sum of seven thousand four hundred dollars (\$7400).

*Donation*—In consideration that the vessel is to be used for missionary purposes, the party of the second part further agrees to contribute five hundred dollars (\$500) toward the building of the vessel, said \$500 to be deducted from said \$7400, making the net price six thousand nine hundred dollars (\$6900), to be paid as follows:—

*TERMS of Payment*—One thousand five hundred dollars (\$1500) when the keel is laid; two thousand dollars (\$2000) when the vessel is half completed; and three thousand four hundred dollars (\$3400) when the vessel is completed, delivered, and accepted.

It is further agreed by the party of the second part that inasmuch as this vessel is to be built for the denomination who observe the seventh day of the week as the Sabbath, that he will not do, or permit to be done, any work or labor on said vessel on the seventh day of the week, commonly known as Saturday.

In witness whereof, we have hereunto set our hands the day and year first above written.

C. H. Jones  
John I. Tay  
Matthew Turner.

'Brother Tay,' reported the building committee, 'was at the yards nearly every day. He saw every stick of timber that was put into the ship, and reports that Captain Turner has done a thorough, substantial job, and has not slighted the work in any particular. Indeed, it appears that he has manifested a special interest in this enterprise, and taken more than ordinary care to have everything just right.'

*Pitcairn* was launched at 10 P.M., Monday, 28 July 1890, at Turner's Benicia shipyard. Instead of the usual custom of treating the launching crowd to wine and beer, a light 'lunch' was provided. The name *Pitcairn* was chosen by the Foreign Mission Board.

The question of installing auxiliary power had been examined, and it was found that suitable gas engines of thirty horsepower would cost \$5000 or \$6000 additional. Power was accordingly left out, but space was provided forward of the galley for gasoline tanks for possible future installation.

The sails were made in Chicago of Woodbury duck as follows:

Mainsail	371 yds	#1	Standing jib	102	3
Foresail	291	1	Flying jib	93	5
Staysail	120	1	Ringtail	172	7
Squaresail	393	6	Jib topsail	98	8
Fore gaff- topsail	87	5	Main topmast staysail	151	8
Total			1576 yards		

A full set of flags was donated as follows: 3 ensigns, 6, 12 and 15 feet long; 1 burgee, 10 x 25 feet; 1 Union Jack; 1 each English, French, German, Chilean flags; 19 signal flags.

She was coppered to ten feet draft, or just above the load waterline, and carried fifty tons slag ballast under the cabin floor. Cost ready for sea was as follows:

## PITCAIRN, MISSIONARY PACKET

Hull, per contract	\$7400.00	Lumber	78.66
Coppering bottom	852.00	Charts, etc.	116.15
Sails	706.56	Cabin furniture	129.00
4 Steel water tanks	475.00	1 18-ft. yawl	90.00
Flags	159.80	1 20-ft. otter boat	100.00
Chronometer	150.00	Bedding, etc.	266.00
Hardware	633.17	Rigging	775.00
Crockery and tinware	197.54	Ducking	512.62
Anchors, Chains and		Insurance	800.00
Rope	921.82	Misc.; fittings, sup-	
Provisions	1944.42	plies, labor	1988.34
Dry Goods	386.97	Total	\$18683.05

As first fitted out, *Pitcairn* grossed 121 tons and measured 93.5 by 27.2 by 10 feet. She set forth from San Francisco on 20 October 1890 with a crew consisting of mate, carpenter (Tay), three seamen, cook, and cabin boy, under Captain J. M. Marsh, and arrived at Pitcairn on 25 November. From there she went on to Tahiti, and then called among the Austral Islands, Cook Islands, Samoa, Fiji, Tonga, Norfolk Island, and on to New Zealand. Twice her ensign was at half-staff during the cruise, as Tay died at Suva on 8 January 1892 and Captain Marsh died of influenza at Auckland on 3 June 1892.

After her return to San Francisco, where she arrived on 9 October 1892, *Pitcairn* was given an extensive overhaul, at a cost of over \$2000. She was rerigged as a half brig, as shown in Plate 24, recoppered, given new sails, and her forecastle and galley were enlarged, increasing her gross tonnage to 171. Under this rig she made four more voyages with mission supplies and personnel among the Pacific islands, until the development of regular steamer service made her further use unnecessary, and she was sold in 1900 to become a freighter.

Henry A. Arnold of San Francisco owned her for a year, operating her along the west coast of Mexico, and then sold her to Herbert R. Spencer of Manila. *Pitcairn* took a cargo of flour from San Francisco to Manila, and later traded among the islands. She was lost on the coast of Mindoro on 17 October 1912.



## *The Sweet Swan on Salt Water*

BY R. C. HOLMES

**T**HOUGH Shakespeare's use of nautical expressions, and his descriptions of scenes on board ships, do not give a sailor the impression (as, for instance, do the sea poems of John Masefield) that the author had personal experience of life afloat, yet he obviously took pains to find out the meaning of the terms he used, and to apply them correctly, unlike many writers of what Joseph Conrad so aptly calls the 'cast anchor school.'

Most likely, however, it caused him little trouble to interpret the sailors' peculiar language, for he lived in an age when people were intensely interested in the sea (and those who sailed it) because of the new lands which were being discovered beyond the setting sun. Consequently, nautical expressions not only fell naturally from the lips of those who had never ventured afloat, but were used by them correctly.

To-day we are still supposed to be a seafaring nation, but a very small proportion of the population has any knowledge of, or interest in, the life at sea, except during times of war. Yet our language is full of maritime figures of speech, such as 'being at loggerheads' and 'to the bitter end,' which are used daily with little or no idea of their source or original meaning.

Shakespeare's references to the sea and life afloat may conveniently be divided into two classes, the first containing those which are more or less decorative, providing a background for the actors or even furthering the progress of the plot, but necessitating the use of no technical language, and the second covering those which describe some maneuver when the correct use of nautical idiom is essential.

Under the first heading, for example, comes the scene in King Henry V in which he gives a fine picture of a Tudor fleet putting to sea, though as colourful a description could have been given by any landlubber with equal literary ability:

Suppose that you have seen  
 The well-appointed king at Hampton pier  
 Embark his royalty: and his brave fleet  
 With silken streamers the young Phoebus fanning:  
 Play with your fancies, and in them behold  
 Upon the hempen tackle the ship-boys climbing:  
 Hear the shrill whistle which doth order give  
 To sounds confused: behold the threaten sails  
 Draw the huge bottoms through the furrow'd sea,  
 Breasting the lofty surge: O! do but think  
 You stand upon the rivage and behold  
 A city upon the inconstant billows dancing:  
 For so appears this fleet majestical  
 Holding due course to Harfleur.

The ship in which Henry V embarked was officially called *The Trinity*, though usually it was referred to by its more homely title, *The King's Chamber*. She was the largest English vessel afloat at that time, but in this case she was merely one dab of colour (the brightest, no doubt) on a huge canvas, and it was in describing individual ships and the handling of them that Shakespeare displays his nautical knowledge.

Here, as a contrast to the seaworthiness and efficiency of *The King's Chamber* is the very reverse in *The Merchant of Venice*:

How like a younker or prodigal  
 The scarfed bark puts from her native bay,  
 Hugg'd and embraced by the strumpet wind:  
 How like the prodigal doth she return,  
 With over-weathered ribs and ragged sails,  
 Lean, rent and beggar'd by the strumpet wind.

The play is particularly rich in seafaring terms and descriptions, correctly and tellingly applied. In the first few lines we are told of

Argosies with portly sail,  
 Like signiors and rich burghers on the flood,  
 Or, as it were, the pageants of the sea,  
 Do overpeer the petty traffickers,  
 That curtsy to them, do them reverence,  
 As they fly by them with their woven wings.

How like, in curves and contour, to the swelling mainsail of a Tudor galleon was the bulging waistline of the prosperous merchant! And the bobbing up and down of little boats compared with the stately movements of a big ship aptly describes the deference, the bowings and doff-



ing of bonnets by underlings, as the 'rich burgher' moves majestically along the street.

*The Tempest* contains an amusing illustration of the effect of a nervous passenger on an irate mariner, to whom all passengers were a nuisance and a superfluity. More than once I have heard sailors say 'Passenger liners would be alright if they carried no passengers' after an occurrence somewhat similar to the following:

- Alonso. 'Good boatswain, have care. Where's the Master? Play the men.'  
Boatswain. 'I pray now, keep below.'  
Antonio. 'Where is the Master, boatswain?'  
Boatswain. 'Do you not hear him? You mar our labour: keep your cabins: you do assist the storm.'  
Gonzalo. 'Nay, good, be patient.'  
Boatswain. 'When the sea is. Hence! What care these roarers for the name of king? to cabin: silence! trouble us not.'  
Gonzalo. 'Good, yet remember whom thou hast on aboard.'  
Boatswain. 'None that I love more than myself. You are a counsellor: if you can command these elements to silence, and work the peace for the present, we will not hand a rope more: use your authority: if you cannot, give thanks you have lived so long, and make yourself ready in your cabin for the mischance of the hour, if so hap. Cheerly, good hearts! Out of our way I say.'

A few seconds later the boatswain says 'Bring her to try with main course,' and here, I think, we have the best example of Shakespeare's correct use of nautical terminology. There has been some controversy as to whether the above was one order or two—should a mark of punctuation, such as a colon or full-stop, appear after 'to'? On the strength of merely one instance in Hakluyt the armchair experts have decided that it is one order which, in my opinion, is not only wrong, but underestimates Shakespeare's knowledge of seamanship.

Having spent some years in square-rigged vessels, I consider that there were decidedly and necessarily two definite and different (though complementary) orders, because two actions had to be taken. Firstly, as the ship was drifting ashore it was essential to bring her to the wind in order to try to beat off the land. Secondly, it was important to set a sail immediately to expedite bringing her to. And that is where Shakespeare shows that he understood the handling of a ship, for he indicates the sail which (in Elizabethan ships) would best serve the required purpose, the main course, the largest sail abaft the middle of the vessel. So, in justice to the

author, and in accordance with the accepted practice of seamanship, the line should read 'Bring her to. Try with main course.'

Another expression which has been questioned is 'a-hold' ('Lay her a-hold, set her two courses, off to sea again'). According to most Shakespearean editors it means 'held'; others, a minority, say it means 'a-hull,' whatever that may be. The most obvious and likely conclusion is that it was the Elizabethan equivalent of our 'haul,' as exemplified in our term 'close-hauled.' Many a time when I was Mate of a full-rigged ship did I report to my relief at the end of my watch 'She will just lay her course close-hauled' or 'I've had to haul her up,' using 'haul' as Shakespeare used 'a-hold.' If this surmise is correct, the modern interpretation of the line quoted would be 'Let her lay close-hauled, set her two courses,' etc.

Regarding that last quotation, I have also heard it asked on more than one occasion by those unfamiliar with the sea how a vessel could steer two courses at once. What the enquirer did not realize was that the reference was to sails, not to a direction to be steered. The two largest sails in a ship (the main- and fore-sail) were, and still are, known as 'courses,' though to make the whole business more complicated the corresponding sail on the mizzen-mast was not called the mizzen-course, or even the mizzen-sail, but the crossjack; and to make it more confusing, it was pronounced 'crojick'; sailors are like that.

Shakespeare makes liberal use of shipwrecks (there are about half a dozen in his plays), but vivid though his descriptions of them are, it does not follow that he was ever involved in, or even saw one.

The prime motive of such mishaps, of course, is to provide a means of introducing the various characters to each other—the survivors from the shipwreck and the castaways whom he has already installed on the barren island or the desert shores of Bohemia—though the scene on board just before the wreck gives him the opportunity of picturing the reactions of the passengers and crew to the impending tragedy. And here again, in describing the sailors' behaviour, Shakespeare displays his knowledge of seamanship.

He stresses what is known to everybody who has served in sailing ships, that it is not the strength of the wind nor the height of the sea which is most to be feared, but the proximity of the land to leeward—the dreaded lee-shore. Given sea-room and a seaworthy ship, there is nothing to be frightened of, no matter how hard it may blow, as the mariners in *Pericles* tell us:

1st. Sailor. 'Slack the bolines there! Thou wilt not, wilt thou? Blow and split thyself.'

2nd. Sailor. 'But sea-room and the brine and cloudy billows kiss the moon, I care not.'

The first sailor stressing the necessity for a taut bowline (so that the vessel can lay as close to the wind as possible) serves to emphasize the second's reference to sea-room. The same insistence on the importance of sea-room is apparent in the opening scene of *The Tempest*, where the boatswain says 'Blow till thou burst thyself, if room enough.'

The few of us who have had the good fortune to walk the poop of a full-rigged ship running before a fresh following wind, and have watched the royalmasts sweep great arcs across a starry sky as the vessel rolled on the crest of a sea, before rushing down the lee slope of the wave and disappearing in the trough, will feel that the Clown in *The Winter's Tale* ('Now the ship boring the moon with her mainmast, and anon swallowed in yest and froth') must also have walked the poop at some time, too, and with his eyes open and imagination alive. Clown though he was, that description makes him more worthy of being called a sailor than the Mariner in the same play, who was either a bad navigator, or living up to the sailors' reputation for telling tall stories. He assures Antignous that the 'ship hath touch'd upon the deserts of Bohemia,' a country which, unless old maps are wrong, possessed no coastline. Perhaps he, like the bosun in *The Tempest* couldn't be bothered with passengers' foolish remarks.

Jaques' reference to the dryness of 'the remaining biscuit after a voyage' seems to indicate that 'hard tack' was as unpalatable in Shakespeare's days as it undoubtedly was when it formed the least interesting part of my monotonous diet. In fact, Jaques would probably recognize the thirty-year-old Liverpool pantile which I retain as a memento of my days in sail. Moreover, I think it would have kept without the preserving coat of varnish with which I covered it, so rock-like was it.

Regarding superstitions, in over thirty years at sea, I have never heard that a pilot's thumb (or any other part of him, for that matter, detached from his body) brought good luck (*Macbeth*, Act I, Sc. 3), but sailors are still as averse to having a corpse on board as they were when Pericles' wife died in childbirth at sea, though perhaps nowadays they would not state their case as bluntly as this:

1st. Sailor. 'Sir, your queen must overboard: the sea works high, the wind is loud, and will not lie till the ship be cleared of the dead.'

Pericles. 'That's your superstition.'

1st. Sailor. 'Pardon us, Sir, with us at sea it hath been observed, and we are strong in custom. Therefore briefly yield her, for she must overboard straight.'

I have only been able to find one nautical term misapplied by Shakespeare, and that occurs in the description of Cleopatra's barge:

like a burnish'd throne,  
Burn'd on the water: the poop was beaten gold,  
Purple the sails; and so perfumed, that  
The winds were love-sick with them: the oars were of silver,  
Which to the tune of flutes kept stroke, and made  
The water, which they beat, to follow faster,  
As amorous as their strokes. —————  
————— at the helm  
A seeming mermaid steers: the silken tackle  
Swell with the touches of those flower-soft hands  
That yarely frame the office.

Quite a luxurious craft, by the sound of it; the kind which a Hollywood film director would delight to have 'on location.' As it is purely a river boat, it is really out of place here, and it is only included because when Shakespeare talks of silken tackle swelling, he obviously intends 'tackle' to mean 'sail.' Tackle was, and still is, that apparently disorderly medley of ropes and lines which, on sailing ships, so mystifies landmen; it was never used to describe sails.

However, that is but one small misuse of nautical idiom in the vast amount of his works. I have heard a First Lord of the Admiralty make far more mistakes in one short speech. In fact, when I hear such a pseudo-mariner airing his newly acquired and wrongly applied nautical vocabulary, I feel inclined to echo Pericles' words:

'This fresh new-born sea-farer,  
I would it would be quiet.'

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# Notes

## GOVERNMENT PUBLICATIONS USEFUL TO MODEL BUILDERS

In the October 1945 issue of *THE AMERICAN NEPTUNE*, Mr. M. V. Brewington listed some Government publications for ship model makers. The writer, in search of information on coastal craft, has found some references that may be of interest to such men.

The New York Public Library was used as the only source of Government reports. It will be noted no Revenue, Naval or Lighthouse Services vessels are listed. Reports of these departments were not examined, because the writer feels that that task can be performed much better by those who have been privileged to work under Commodore Dudley W. Knox during the war and have had access to more complete files than those of the New York Public Library.

Most of the references cited were written by Captain Joseph W. Collins who was in Government service in the eighties and nineties as a technical adviser to the Fish Commission, as an aide in the preparation of the 1880 Census of the American Fisheries, and as a commissioner to various International Fisheries exhibits. In order to improve the American fishing vessel, he studied foreign types. This list reflects his work, for it has more information on other countries' fishing vessels than it has on types common to the waters of the United States.

If an article is listed here, it has either plans, unusual illustrations, construction or rigging data, or background material that is necessary to understand the period of the vessel described. All publications are from the Government Printing Office, Washington.

*Report on The Principal Fisheries of The American Seas:* prepared for the Treasury Department of the United States by Lorenzo Sabine, House Executive Document, III, No. 23, 32nd Congress, 2nd Session. (Washington, 1853.) This is important as the first history of the American fisheries, but has very little descriptive material on boat construction. It was also printed with *Report of Thomas Jefferson, Secretary of State on the Subject of Cod and Whale Fisheries to the House of Representatives, 1 February 1791*, in House Executive Documents, 42nd Congress, 2nd Session. (Washington, 1872.)

*Catalogue of Collection Illustrating the Fishing Vessels and Boats and Their Equipment; the Economic Condition of the Fisheries; Anglers Outfits, etc.,* United States National Museum Bulletin 27. (Washington, 1884.) No plans or pictures are shown of the models exhibited at the London International Fisheries Exhibit of 1883, for which this catalogue was prepared, but there is some descriptive material on the original vessels as to size and masting. Many of these models are in the Museum collection.

*Catalogue of the Watercraft Collection in the United States National Museum*, compiled and edited by Carl W. Mittman, United States National Museum Bulletin 127. (Washington, 1923.) There are no plans presented, but the editor has given information on the vessels, models of which are in the collection. Although there are many types of craft described and illustrated, most of the models represent small coastal types.

*The Fisheries and Fishery Industries of the United States*, prepared through the cooperation of the Commissioner of Fisheries and the Superintendent of the Tenth Census by George Brown Goode, Assistant Director of the United States Museum, and a staff of associates. (Washington, 1884-1887.) This report is in five sections and seven volumes.



Section IV, *The Fisherman of the United States*, contains an article, *The Management of Vessels*, by Joseph W. Collins. Some of the commands used in handling a fishing schooner, and how they were executed, are given in this article. They are the only source references that the writer has ever found on American fishermen's seamanship.

Section V, *History and Methods of the Fisheries*. The volumes on text and plates are so cross-indexed that a ship model maker will find information very easily. Sectional plans, elevation plans, deck layouts, gear used in the halibut, cod, mackerel, and whaling trades, are well presented. The seal and oyster industries are described, but not in so great detail.

*Report of the Ship-Building Industry of the United States*, by Henry Hall (Special Agent), 10th Census, VIII. (Washington, 1884.) There is information on the following types of vessels: fishing, merchant, and inland waterways. It contains rigging requirements, plans and pictures of many vessels. The author has not documented his source of information, which is to be regretted if for no other reason than that Donald McKay's clipper ship plans are published here for the first time.

'Report on Pisciculture,' by Thomas B. Ferguson, in *Report of the United States Commission to the Paris Universal Exposition 1878*, V. (Washington, 1880.) No plans are given in this report, but there are some very fine detailed illustrations of Norwegian fishing vessels.

*Message from the President of the United States Transmitting a Communication from the Secretary of State, Forwarding the Report of the United States Commissioner to the International Fisheries Exhibition of 1898 at Bergen, Norway*, 56th Congress, 2nd Session, Senate Documents 39. (Washington, 1901.) Captain Joseph W. Collins, the Commissioner, presents pictures, descriptions and plans of fishing boats,

with gear used in the following countries: Norway, Sweden, Denmark, Russia, Finland, France, Japan and England.

The *Annual Reports* of the Commissioner and the *Bulletins* of the Fish Commission (1871-1903), the Bureau of Fisheries (1904-1940) and the Fish and Wild Life Service (1940- ), have some interesting data. In the following, the words 'Report' or 'Bulletin' refer to any of the three names that this Government department has had. All were printed in Washington and, for the sake of brevity, the dates of publication have not been given.

#### From the Reports & Bulletins

*History of the American Whale Fishery from Its Earliest Inception to the Year 1876*, by Alexander Starbuck, Report of 1875-76. The great value of this report is in its background material and should be read by all builders of whaling vessel models.

*The Natural and Economical History of the American Menhaden*, by George Brown Goode, Report of 1876-77. In this article is a partial list of steamers and sailing vessels employed in menhaden fishing, descriptions of a seine boat and a Cape Ann dory, a drawing illustrating gear used in a seine boat, a deck layout of a menhaden steamer and a poor drawing of a dory. This material was apparently used as the basis for a similar report in *The Fisheries and Fishery Industry*. Material on the seine boats and Cape Ann dories, although meager, is with one exception the only contemporary account the writer has found on these boats. Plans of a Cape Ann dory were published in the second edition of C. P. Kunhardt's *Small Yachts*, edited by W. P. Stevens. No plans of a seine boat have been published so far as the writer knows.

*List of American Vessels Engaged in the Menhaden Fishery in 1880*, Report of 1881. This list of 468 fishing vessels gives

name, type of rig, tonnage, number of crew, mode of fishing, grounds fished, and port of ownership.

*Memoranda of Methods Employed by Fishermen for Barking and in Other Ways Preserving Nets and Sails*, by F. H. Storer, Report of 1882. In order to preserve their sails and gear, some fishermen tan them in a solution of boiling water and bark. The author describes and gives a history of this process. Model makers who put sails on their models should consult this article, for books on ship model making have generally ignored this fact.

*Report on the Construction and Outfit of the United States Fish Commission Steamer Albatross*, by Z. L. Tanner, Lieut. Commander, USN, Report of 1883. In this are plans showing several deck layouts and details of deck fittings, an elevation plan, and drawings showing sections of the ship such as interior of the pilot house, crew quarters, etc. So far as the writer knows, this report contains the first description of electrical wiring of ships' lights published in this country.

*Report on the Construction and Equipment of the Schooner Grampus*, by Joseph W. Collins, Report of 1887. Ship model makers will find much information in this article that will help them visualize timber used in various parts of a vessel, as a list of timber used in this schooner is given. The plans, rigging specifications, deck details and coppering specifications are presented very clearly. This is probably the most complete information on any sailing vessel published by an American designer or builder. In many years of searching for source material on sailing craft, I have never found anything so complete as this. The only thing lacking from a model maker's point of view is a belaying pin. *Grampus* was designed by Captain Collins with the help of D. J. Lawlor of Chelsea, Massachusetts, who had built the schooner *Roulette* in 1884. With the schooner *A.*

*D. Storey* of Gloucester, built at the same period, these three greatly influenced the future design of American fishing vessels. Captain Collins claimed for *Grampus* many new improvements for fishing vessels, such as wire standing rigging, and having the mainmast considerably longer than the foremast.

*Report Upon the Operation of the United States Fish Commission Schooner Grampus from 15 March 1887 to 30 June 1888*, by Joseph W. Collins and D. E. Collins, Report of 1887. There are plans of the following Newfoundland vessels: 64-foot schooner *Michie*; and 17-foot Toulouquet boat, a type named for a town on the northeastern coast of Newfoundland. Pictures and measurements of a fishing skiff, a seine boat and a pinkie, all of the Newfoundland type, are also given.

*Review of the Fisheries of the Great Lakes in 1885*, compiled by Hugh M. Smith and Mervin Marie Snell, with *Introduction and Description of Fishing Vessels and Boats*, by Joseph W. Collins, Report of 1887. Plans are presented of a 61-foot steamer, *T. R. Merrill*, a pound net boat, a pound net dinghy, deck plan of a stake net boat and a sail plan of a Mackinaw boat.

*The Beam Trawl Fishery of Great Britain with Notes on Beam Trawling in Other European Countries, etc.*, by Joseph W. Collins, Bulletin of 1887. There are some very interesting plans of steam vessels used in the British trade, such as a fish carrier, an iron ketch, a steam screw trawler and a schooner rigged steam screw trawler built of wood. Material on a ketch rigged sailing trawler is also given.

*Suggestions for the Employment of Improved Types of Vessels in the Market Fisheries with Notes on British Fishing Steamers*, by Joseph W. Collins, Bulletin of 1888. Captain Collins designed a 34-foot fishing cutter to be used in the California fish-

eries, which he felt needed a small welled vessel that could be used to bring live fish into market, as ice was too costly for that trade. He gives body, breadth, sheer, and sail plans of this boat, as well as an unnamed 87-foot British steam trawler and a 75-foot steamer of Berwick, England.

*Notes on the Crab Fishery of Chrisfield, Maryland*, by Hugh M. Smith, Bulletin of 1889. Plans of a dugout crab canoe and a batteau used in this trade are given.

*The Fishing Vessels and Boats of the Pacific Coast*, by Joseph W. Collins, Bulletin of 1890. The material shows plans of a San Francisco felucca, sail plan of unnamed Alaskan schooner, a 14-foot fur sealing boat, a Washington dugout canoe and skin boats of Alaska.

*The Oyster Industry of Maryland*, by Charles H. Stevenson, Bulletin of 1892. The pictures of Maryland boats presented here are the most important part of this article for a ship model maker.

*Notes on the Boats, Apparatus and Fishing Methods Employed by the Natives of the South Sea Islands and Results of Fishing Trials by the Albatross*, by A. S. Alexander, Report of 1901. This report has pictures and descriptive material, but no plans of boats used in the South Sea Islands. *Albatross* made studies in the following groups of islands: Society, Tonga, Fiji, Gilbert, and Marshall.

*The Oyster and Oyster Industry of the Atlantic and Gulf Coast*, by E. P. Churchill, Report of 1918-19. This contains some pictures of boats used in the trade, but no plans.

*An Analytical Subject Bibliography of the Publications of the Bureau of Fisheries, 1871-1920*, by Rose M. E. MacDonald, Librarian, United States Bureau of Fisheries. (Washington, 1921.) Most of the titles listed here are so listed that they give little hint of their content value to a ship model maker. It does not give

plans or illustrations. Unless a ship model builder had ready access to a complete file of reports and bulletins, he would find this of no value.

ALBERT E. PARSONS

#### REMINISCENCES OF ISLE AU HAUT

My acquaintance with the wonderful coast of Maine began in 1884 when we spent a month on Isle au Haut.

My father had asked a New England friend to suggest a place for a vacation and he said 'Ile au Haut in Penobscot Bay,' meaning Isle with Peak, so aptly named by Champlain.

We arrived at Rockland one foggy morning on the good steamer *Penobscot* and changed to *Mount Desert* for the trip across the bay. The granite monument on Fiddler's Ledge loomed up out of the fog as we neared the Fox Islands, then the Sugar Loaves in the Thoroughfare.

A man went through the boat ringing a large bell and calling out, 'Passengers for North Haven land from the lower deck aft.' There was no sign of a wharf but we saw a large lifeboat approaching, rowed by a bearded man sitting on a forward thwart and wearing a helmet. This proved to be the ferry to go on from the island.

Passing Widow's Island with the red brick Naval Hospital we went out into another blanket of fog. When we reached Green's Landing at the southern end of Deer Isle my father asked a man on the wharf where we could hire a boat to take us down to 'Eel' au Haut. 'Never heard of it,' he said, but another man came to our rescue saying, 'Oh, he means the Isle au Hawt,' and told us where to find Captain Charles Chapin who had a sailboat for hire. We finished our voyage in the good sloop *Iolanthe*, beginning our acquaintance with the capable and courteous captain that was to last through many years.

We found comfortable rooms at the home of Captain William Turner who was the proprietor of the store in the old

lobster factory. We soon made the acquaintance of the townfolks, finding them friendly and well educated.

The village blacksmith was Haskell Turner, an artist in his line. Clarence, his next brother, was a carpenter and boat builder; his wife was postmistress; a third brother, John, was a photographer and barber but could turn his hand to other things.

A small town hall had been built some years earlier at Lookout Point by volunteer labor and public subscription, my father's friend having contributed \$100. When the Point was bought by the Club the building became the nucleus of their clubhouse, additions being built from time to time for the Lookout summer postoffice, doctor's quarters, rooms for the housekeeper and her assistants, and so on.

The large room over the store in the lobster factory then became the community center. I went to one of the social gatherings and saw a cheerful group enjoying square dances, a fiddler calling the turns. The men slipped out once in a while for a smoke on the wharf, leaving the air clean for the women who at that day were not smokers.

A good dirt road went around the northern end of the island, then down the eastern shore to Head Harbor. My three brothers and I walked it one day, having heard about the lake over a mile long which we found to be a beauty spot well worth seeing. We went in bathing but came out of the cold water in a hurry.

The Turner, Barter, and Hamilton families made up most of the population, and although disclaiming relationships were doubtless descendants of the same pioneering ancestors.

Lobstering was an important activity, in sloops among the outer offshore ledges, in dories or peapods nearby. A vegetable garden, cow, chickens, and a woodlot completed an independent livelihood.

Kimball's Island on the northwest

side of the Thoroughfare was owned by Benjamin A. Smith, a bachelor; his mother, who kept house for him, was the daughter of Captain Kimball for whom the island was named.

I rowed across to make a call, receiving a cordial greeting and promptly adopted Mr. Smith as Uncle Ben. A cow or two, a pig, chickens, a dog, and about a hundred and fifty sheep seemed enough to occupy one man's time.

At the end of our month we went to The Landing by sloop to meet *Mountie* for our return voyage, carrying away never-forgotten memories.

Two of my brothers spent the summer of 1891 on Kimball's and reported that the Club was operating two steamers. They were licensed to carry passengers, were manned by a licensed crew, and subject to annual inspection.

The smaller one, *Circe*, was an open steam launch with standing roof and storm curtains. She was deep in the water, low freeboard, and too lean forward to lift in a head sea. Being without davits and lifeboats her passenger license restricted her to the five-mile trip among the islands to The Landing twice a day, carrying the mails and connecting with *Mount Desert*. She was sixty feet long with a speed of ten miles an hour. In the late nineties *Circe* was required to tow a lifeboat half as big as herself, and eventually the heavy steam equipment was replaced with twin internal combustion motors, improving her serviceability considerably.

*Daydream* was eighty-eight feet long with a speed of twelve miles. She had a pilot house and cabin, an open cockpit aft, and two masts without sails. She carried lifeboats and was licensed for passengers anywhere in the bay, making weekly trips to Rockland for Club members arriving by rail.

In 1893 my wife wisely chose Kimball's in preference to the Chicago World's Fair for our wedding trip. We crossed the bay in *Daydream* and were met at the Club wharf by Uncle Ben in



a rowboat. His mother had died and Mrs. Barton, widow of a doctor, was his housekeeper, with her young son, Frank, to help with the chores.

In 1895 we took our small daughter and started her seafaring life in Frank's sailboat before she could walk. Rowing home in a calm irked me and I vowed to buy a naphtha launch. This was not taken seriously but in July 1896 I bought a Daimler yacht tender sixteen feet four inches long, shipped it to Portland on *SS Manhattan*, transshipped to *Salacia* for Boothbay Harbor, and to *Silver Star* for Rockland.

Filling the tank with 76° naphtha at eight cents a gallon I started across the bay and had reached Widow's Island when the platinum ignition tube blew out. Not having a spare tube I set the oarlocks and used the old reliable ash oars to row the remaining eight miles to Kimball's.

During our successive summers we became closely acquainted with the Club people. They could go where they liked in *Circe* on private excursions, and one morning I was asked to make the afternoon trip with the mails so they could use her for a cruise to Mt. Desert. I carried the U. S. Mail with pride in my little boat.

The Club steamers were not fitted for carrying freight, and in the late nineties the steamer *Vinal Haven* was induced to touch at the Lookout wharf, westbound at 7 A.M. and eastbound at 5 P.M. This was of much benefit to the islanders as well as to the Club members.

The new service was convenient for me as I could take the train to Portland and the direct steamer to New York on my frequent trips. One morning *Vinal Haven* had started before we reached the wharf so I stood up waving my handkerchief. She stopped and bidding my wife goodbye I handed up my bag, grasped the hands held down and was hauled aboard. The row of staring people as they watched the little boat going

off in the hands of a lone girl afforded me quite a lot of amusement.

STANTON M. SMITH

#### COMMENTS ON THE COALE PAINTING

I was extremely interested in Commander G. B. Coale's paper on the 'Arrival of the First Permanent English Settlers off Jamestown, Virginia, 13 May 1607,' and the accompanying illustrations printed in *THE AMERICAN NEPTUNE* of January 1950 as I am at present engaged upon a study of English navigational instruments and methods at this period. The care taken over presenting accurate rigging and hull design is evident and the result masterly. May I make two observations? The St. George's flag now forms the flag of an English Admiral, not Vice-Admiral (this is a white St. George's cross with a Red Ball in the upper canton next to the mast). The other observation is of a detail affecting the accuracy of the painting. The telescope was not developed into a practical instrument until 1608. The man standing on the poop of *Susan* holding one to his eye is therefore probably incorrectly depicted, and, as a further matter of detail, had he been holding one, he should have had his left hand under the telescope, grasping it palm upwards so that his bent left arm forms a bracket.

It is true that Roger Bacon, d. 1294, wrote 'Glasses or diaphanous bodies may be so formed that the most remote objects may appear just at hand'; that Chaucer mentions 'queynte mirours and . . . perspectives' in the *Squire's Tale*; that the Elizabethan scholar Leonard Digges made 'Perspective Glasses' and reflecting telescopes about 1550—he died in 1570; that Dr. John Dee, the astrologer, also wrote of perspective glasses; that William Bourne wrote a *Treatise on the Properties and Qualities of Glasses for Optical Purposes* between 1580 and 1590; and that Thomas Hariot took some sort of telescope to Virginia on the coloniz-



ing venture of 1585-1586 and, a quarter of a century later, applied it like Galileo to celestial objects; nevertheless, the first practical commercial telescopes were contrived independently but simultaneously by Dutch lens makers of Middelburg, Hans Lippershey and Zaccharias Jansen, and James Metius of Alkmar. They were refracting telescopes with concave eyepieces and were first marketed in October 1608. Galileo, being in Venice in May 1609, there learned how to construct them and was soon getting startling results from his study of the heavens by their use. By February 1610 telescopes were being made in London. Prince Maurice of Nassau seems to have been the first military user of the telescope—as early as 1608. Indeed, as with so many inventions, the commercial development of the telescope may have been the result of military requirements (its first use must have been somewhat similar to that of radar).

However that may be, until late in 1608, when it was commercialized by the Dutch, the telescope was in the development stage only by Dutch lens makers and certain English scholars, or as one would say today, scientists—Hariot and Edward Wright to name two. Neither Captain Smith in his *Accidence for Young Seamen* of 1625 and *Sea Grammar* of 1626, nor Mainwaring in his *Seaman's Dictionary*, written in about 1623 but not published until 1644, mentions the telescope as an instrument for seamen. The oldest known dated optical instrument in the world is a telescope by Maria de Rheita marked 'Ao 1645-6 M R' in the National Maritime Museum at Greenwich, England. It has a magnification of eighteen diameters, the tube is made of paper and it is six feet six inches in length when extended. Sir William Monson writing, at the latest in the 1620's, of 'Stratagems to be used at Sea,' confessed that more than one would have been excellent had it not been that 'prospective glasses' were 'so common,' clear indica-

tion that telescopes were quickly at sea, despite their unwieldiness, as soon as they were commercialized.

D. W. WATERS

#### ADDITIONAL NOTE ON *Margaret and Jessie*

A LETTER from Mr. C. Bradford Mitchell of 1 October 1948 states quite correctly that the account of the career of *Margaret and Jessie*, formerly the Isle of Man Steamer *Douglas* and later the U. S. Steamer *Gettysburg* given in my article, 'Ships That Tested the Blockade of the Carolina Ports, 1861-1865,'<sup>1</sup> 'does not altogether square with that given by the author of *The Centenary of the Isle of Man Steam Packet Co., Ltd. (1830). . .*'

It is comforting to know that at least one reader of the July 1948 issue of *THE AMERICAN NEPTUNE*, in which my article appeared, took the trouble to read it carefully and write a letter to the editor about it. To show my gratitude to Mr. Mitchell, I am writing promptly to tie up all of 'the loose ends' he mentions, save one.

S. C. Hawley, U. S. Consul at Nassau, New Providence, reported to U. S. Secretary of State Seward on 3 June 1863 (Despatch No. 32) that the blockade runner *Margaret and Jesse* [*sic*], while being chased by the U. S. Steamer *Rhode Island* on 30 May 1863, had been 'driven on shore on the eastern coast of the Island Eleuthera in the Bahamas, about three miles to the eastward of James' Point.' He added that, on hearing of the wreck, the owners of *Margaret and Jesse* had requested the Colonial Governor to have the British man of war *Rosario* convoy a steamer they had hired to bring *Margaret and Jesse's* cargo to Nassau, and that *Rosario* 'left port in that business.' *Margaret and Jesse*, he reported, had arrived at Nassau on 2 June 1863, 'apparently not much damaged.'

There can be no reasonable doubt

<sup>1</sup> *THE AMERICAN NEPTUNE*, VIII (1948), 196-241.

that *Margaret and Jessie* was employed as a blockade runner after she was run ashore on Eleuthera, that she was captured on 5 November 1863, or that she was converted into the blockading steamer *Gettysburg*, as stated in my article.

First, with respect to her blockade running activities between 30 May and 5 November 1863: The records of the Collector of Customs at Charleston, South Carolina, now in the National Archives and available for inspection, including registers of export duties, quarterly abstracts of vessels entering and clearing that port and bond books covering cotton exports, show that *Margaret and Jessie* arrived at Charleston on 16 June and 20 July, and sailed therefrom on or about 9 and 25 July 1863.

W. C. Thompson, U. S. Vice-Consul at Nassau, reported to Secretary Seward on 26 October 1863 (Despatch No. 25) that *Margaret and Jessie* had arrived there on 24 October 1863 from Wilmington, North Carolina. In a subsequent despatch (No. 29, dated 17 November 1863), Thompson stated that she had cleared Nassau for St. John, New Brunswick, on 31 October 1863.

Vessels bent on violating the blockade customarily cleared Nassau for St. John.

As to the capture of *Margaret and Jessie*:

When the war was over, the U. S. Treasury Department made strenuous efforts to find and take into its custody all existing assets of the blockade running companies. Officers, directors, stockholders, and employees of these companies were summoned to appear before representatives of the Department and interrogated under oath. One of the persons so examined was Henry Cobia, president of The Charleston Exporting and Importing Company. In response to the interrogatory: 'What number of ships were employed or under control of your company?' Mr. Cobia stated: 'We had two steamships: The *Margaret and*

*Jessie* was the name of one, and the steamer *Syren* was the name of the other. . . . The steamer *Margaret and Jessie* was captured on a return voyage about October 1863. . . .' (Copy of deposition by Henry Cobia, dated 9 January 1866, before Daniel Sayer, Assistant Agent, Treasury Department, File No. 6030, Cotton and Captured Property Records, Treasury Department, in the National Archives.)

On 5 November 1863 Edward Donaldson, Commander of the U. S. Steamer *Keystone State*, wrote as follows to U. S. Secretary of the Navy Gideon Welles:

Sir.

I have to report that at about 8.30 A.M. of this date we discovered black smoke, and immediately gave chase. Having previously been in chase of a schooner. Saw three steamers one of which proved to be the transport *Fulton*, another the U. S. Str. *Nansemond*, and the third supposed to be the U. S. Str. *Howqua* [sic], also in chase. The *Howqua*, being the dullest vessel was soon run out of sight.

At about 5 O'clock P.M. we came up with the chase. And she proved to be the blockade runner *Margaret and Jessie*, of Charleston S.C. From Nassau bound to Wilmington N.C. The *Fulton* and *Nansemond* having got up to her, I wrote a note to the Commanding Officer of the *Fulton*, (of which I enclose a copy,) saying I would take charge of and send a prize crew on board the prize. His reply was, that *he* had sent a prize crew on board of her. Had her in tow and intended to retain possession of her and tow her to New York. It coming on dark, the wind being strong, and my orders from the Commanding Officer 'immediately off Wilmington,' (meaning the Senior Officer present: S. P. Lee, A. R. A.,) being imperative that I should return to that anchorage today, I permitted the *Fulton* to proceed on her course, with the prize in tow. . . .

On the part of the officers, and crew of this vessel (a list of which I herewith enclose) we claim our full share of the captured vessel.

I respectfully desire to attract the attention of the Department to the fact that the master of the transport *Fulton* sent me what I consider an improper reply. Through the officer sent to him. I being the Senior Officer present, and being within close signal distance, at the time of

capture. He, in my opinion, had no right, or authority, to any control of or command over the Prize during the presence of this ship.

Very Respect'ly Your Obdt Servt,  
(sgd) Edward Donaldson,  
Commander.<sup>2</sup>

The following statistical data relating to *Gettysburg* has been extracted from *Official Records of the Union and Confederate Navies in the War of the Rebellion*, Series II, vol. I, Part 1, p. 95:

Acquisition.—Captured November 5, 1863, in lat. 34°, long. 77° by the *Fulton*, *Keystone State*, and *Nansemond*. Purchased November 20, 1863, from New York prize court by Navy Department.

Cost.—\$90,000

Disposition.—Sold, May 8, 1879, at Genoa, Italy, by Rear Admiral Howell, commanding European Squadron, for \$10,983

Remarks.—Name changed from *Margaret and Jessie*. May 2, 1864, commissioned at New York Navy Yard; active in blockade duty.

I know nothing whatever about the career of *Douglas-Margaret and Jessie-Gettysburg* after the date of her sale in Genoa, as given above. If, in fact, the engines of this steamer 'were lying rusting on the beach at Nassau in July of 1926,' I, too, would like to know how they got there. The story of when and why a gallant ship, after humdrum years in the Mediterranean trade, went back to the scene of her greatest exploits to perish on the Bahaman reefs would make good reading.

MARCUS W. PRICE

#### TWO MARINE ARTICLES IN ANTHROPOLOGICAL JOURNALS

In a previous number of the *NEPTUNE* I published a note regarding articles in anthropological and folklore literature of interest to maritime historians.<sup>1</sup> Two

<sup>2</sup> *North Atlantic Blockading Squadron, November, 1863*, Volume XIV, 89-90, records of the Navy Department in the National Archives.

<sup>1</sup> 'Folklore and Anthropological Literature as a Source for Maritime Historians,' *THE AMERICAN NEPTUNE*, VIII (1948), 150-151.

such articles of unusual worth have recently appeared.

In *The Journal of the Royal Anthropological Institute of Great Britain and Ireland*, LXXVI, 1, 13-23, Pls. I-III, there is an article 'Boats and Fishing on the Cocos-Keeling Islands' by C. A. Gibson-Hill. Boats of this small group, situated about six hundred miles southwest of Java Head in the Indian Ocean, are particularly amusing as they represent a native type which has evolved from a European ancestor. The Islands were first inhabited in 1827 by a Scottish whaler, John Clunies-Ross, and a wild Englishman named Alexander Hare. These two adventurers, together with the Javanese and Sumatran crews of two small trading boats and an astonishing harem of assorted Oriental women, the personal property of Hare, who hailed from no less than nine Indonesian islands, India, China, and Africa, provided the ancestry of the group's permanent population. The earliest boats were slight modifications of the whale-boat but some twenty-five years ago J. S. Clunies-Ross, great-grandson of the original settler, put the finishing touches on the type of craft as used at present. Mr. Gibson-Hill in publishing not only the fascinating history of the type, but the lines and sail plan and the uses and methods of sailing the boats, has made a distinct contribution to the history and development of small craft.

The summer number (1949) of *New York Folklore Quarterly*, V, 2, 146-165, contains an article by Ralph DeS. Childs on 'Phantom Ships of the North-east Coast of North America.' Nearly every other port from the St. Lawrence to the Hudson River has a ghost ship of some kind, Cotton Mather's spectre ship of New Haven being the daddy of them all. Mr. Childs lists and describes briefly the characteristics of many of these ghostly wanderers but he has missed some that are well known. The article is important for it brings together more such

tales for the region than anything else in print and serves as a point of departure for a complete study of the folklore of this interesting manifestation.

E. S. DODGE

# INVENTORY OF THE SCHOONER *Friendship*, 1776

AMONG the miscellaneous items in the Scharf Papers at The Maryland Historical Society is an inventory of the equipment on the schooner *Friendship*, dated 1 October 1776. The vessel was one of the craft acquired by the State of Maryland for use in the 'Sea Forces' then being organized to defend the shores of the Chesapeake against depredations of the British Navy. *Friendship's* place of origin—Somerset County, on the Eastern Shore—is indicated by the superscription on the back of the paper: 'Inventory of the Schooner *Friendship* purchased of Majr Horsey —.'

William Horsey (b. 1745) was the son of Outerbridge Horsey and Mary Dixon. At the age of twenty-six he was chosen registrar of Stepney Parish in Somerset County, and when the Revolution began he was second major of the Upper Battalion of the county militia. He married Eleanor Wailes and when hostilities started he was the father of one son, Outerbridge (b. 1775).

Octor 1st 1776.

The Schooner *Friendship* for sale.

Made Two Voiges & Two years Old.

50 feet Keel	Strate Rabbet	} Her dementions
21¼ feet	Beem	
9 feet	Hole	

An Inventory of her  
Sails Rigen &c }

4 standing sails, mainsail, foresail, fourstacel & Jib. / In Good Order	} Standing & Runing Rigen blocks &c In Good Order
1 new main topsail, 1 old foretopsail, 1 old flying Jib,	
1 ankor wt. 7.3.0	
1 ditto do. 5.0.0	
2 Cables . . . 10½ & 9 Inches 60 fathoms Each	
1 Iron Cumboose, with two potts	
1 Large boat, Carrys 9 Hdds Rum.	

2 Compasses, 1 hour, 1 minuet, & one ½ minuet Glaces  
1 Led and Line  
8 or 10 water Cask from 60 to 100 Gall.  
1 water bucket

Jack Ensighn & Penant,

This Vessel built of Low Ground Oak and well put together, She will be Graved and put in Good Order for Taking in her Cargo in 10 or 12 days.

Will. Horsey

WILLIAM D. HOYT, JR.

## LETTER OF MARQUE

### THE BRIG *Quantibaycook* OF BOSTON, 1799

IT is well known that private armed vessels played a very important part in the winning of the War of 1812, but little is mentioned in our histories of the part played by privateers in the quasi-war with France which began in 1798 and lasted until 1801. A total of 365 private armed ships, with a tonnage of 66,691 tons, 2,723 guns and 6,847 men were engaged in this war and came from the states of Massachusetts (at this date Maine was part of Massachusetts), Rhode Island, Connecticut, Maryland, Pennsylvania, Delaware, Virginia, North Carolina and South Carolina.

Those vessels from Massachusetts are listed in the *American State Papers* in the following document:

Documents, Legislative and Executive, of the Congress of the United States. From the First Session of the first to the second session of the Eighteenth Congress Inclusive. Commencing March 3, 1789 and ending March 5, 1825. Washington. 1834.

### NAVAL FORCE IN 1799

Gentlemen of the Senate and Gentlemen of the House of Representatives.

Judging it of importance to the public that the Legislature should be informed of the gradual progress of their maritime resources, I transmit to Congress a statement of the vessels, with their tonnage, warlike force, and complement of men, to which commissions as private armed vessels have been issued, since the 9th day of July last.

March 2, 1799

JOHN ADAMS.

STATE	DISTRICT	NUMBER OF VESSELS	FORCE	NUMBER OF CREW
MASSACHUSETTS.	PORTLAND & FALMOUTH.	2	6 car'age guns.	20
"	MARBLEHEAD.	6	26 " "	59
"	PLYMOUTH.	1	2 " "	8
"	BATH.	1	16 " "	50
"	BIDDEFORD.	2	9 " "	23
"	GLOUCESTER.	4	14 " "	38
"	NEWBURYPORT.	3	13 " "	37
"	BOSTON.	60	487 " "	1156
"	SALEM and BEVERLY.	34	178 " "	510

One of the Boston vessels was the brig *Quantibaycook*,<sup>1</sup> built at Thomaston, Maine, in 1797. She was 74 feet 2 inches long, with a beam 22 feet 8 inches, a depth of 8 feet 11 inches and registered 129 tons. She was built in the shipyard of General Henry Knox by Captain Howland Rogers, who also built the schooners *Quicklime* and *Montpelier*. General Knox used these three vessels to ship lime and lumber to the West Indies.<sup>2</sup> *Quantibaycook* had one deck, two masts, a square stern, no galleries, and an eagle figurehead. She was first registered at Waldoboro, Maine, and on 6 March 1799 was registered in Boston with Samuel Eames as Master and Thomas H. Perkins and James Perkins of Boston as owners.<sup>3</sup>

#### KNOW ALL MEN BY THESE PRESENTS—

That Handasyd Perkins & James Perkins of Boston Massachusetts— owners of the Private Brig called the *Quantibaycook* and Samuel Eames commander of the same with Thomas C. Amory & Stephen Higginson, Jr. of Boston are held and firmly bound to the United States of America, in the penal sum of Seven Thousand

<sup>1</sup> *Quantibaycook* is a Penobscot Indian name for a pond in the town of Searsmont, Maine, which is known now as Searsmont Pond. The Indian name has a number of variant spellings.

<sup>2</sup> W. H. Rowe, *The Maritime History of Maine* (New York: W. W. Norton & Co., 1948), p. 256.

<sup>3</sup> Peabody Museum of Salem, MS. *Vessels Registered and Enrolled at Boston and Charlestown, 1796-1800*, compiled by the Works Progress Administration.

Dollars, money of the United States, to the payment whereof we bind ourselves jointly and severally, our joint and several heirs, executors and administrators. Witness our hand and seals, this twenty-fifth day of March in the year of our Lord, 1799.

The Condition of the above obligation is such, that Whereas the President of the United States hath this day commissioned the said private Brig and licensed and authorized the said Samuel Eames as captain of the said Brig, his officers and crew, to subdue, seize and take any armed French vessel which shall be found within the jurisdictional limits of the United States or elsewhere on the high seas, and such captured vessel with her apparel, guns and appurtenances, and other goods or effects which shall be found on board the same, together with any French persons, and others who shall be found acting on board, to bring within some port of the United States; also to retake any vessel, goods or effects belonging to the people of the United States which may have been captured by any armed French vessel:

Now if the owners, officers and crew of the said armed Brig shall and do observe the treaties and laws of the United States, and the instructions which shall be given them for the regulation of their conduct, and satisfy all damages and injuries which shall be done or committed contrary to the tenor thereof by the said armed Brig during her commission, and deliver up the same when revoked by the President of the United States; then this obligation shall be void; and otherwise remain in full force.

Sign, sealed and delivered  
in presence of us:—

J. Watson.

Handasyd Perkins.  
Thomas Amory.  
James Perkins.  
Samuel Eames.  
Stephen Higginson, Jr.

E. LEE DORSETT, M.D.





## Book Reviews

*The Mariners' Museum, 1930-1950, a history and guide* (Newport News: The Mariners' Museum, 1950). 7" x 10", cloth. xii + 264 pages, 275 illustrations, end-paper maps. \$4.00.

In commemoration of the twentieth anniversary of its foundation, The Mariners' Museum, Newport News, has issued a liberally illustrated history and guide, compiled by Alexander Crosby Brown, who was, until his resignation last year, Chief of Publications of the institution.

In 1930 Archer Milton Huntington, the originator and benefactor of a variety of learned institutions, established a museum 'devoted to the culture of the sea and its tributaries, its conquest by man and its influence on civilization.' This was to be located on the banks of the James River near the great Newport News shipyard founded by his father, Collis Potter Huntington. The first steps undertaken were the construction of an artificial lake—completed in 1931 and named in honor of Matthew Fontaine Maury—on the shores of which the museum was to be built, and the landscaping of a park, liberally adorned with statuary, which was to serve as a wildlife sanctuary. In 1932 a utilitarian building was put up in the woods at some distance both from lake and river to house the exhibits being collected and the shop in which scale models of vessels, equipment and machinery were to be built. Although originally intended for storage, this service building was converted to exhibition and library use, being opened informally to visitors in the autumn of 1933. Various subsequent additions considerably enlarged the area of the building without altering its uncompromising shed-like quality until the north wing, which has the pleasing air of a museum gallery, was added in 1941.

The liberal space and ample funds available and the close tie, through the board of trustees, with the neighboring Newport News Shipbuilding and Dry Dock Company gave the new institution a unique opportunity to illustrate the history of shipbuilding and maritime technology on a scale never hitherto undertaken in this country. The well-equipped model shop undertook the construction of a series of ship models on the uniform scale of one-quarter inch to the foot. Beginning with steam vessels built at the Newport News shipyard for which detailed plans and information were readily available, the shop produced an interesting series of models of locally constructed steam craft before undertaking the three historic models of the U. S. ironclad *Monitor*, the U. S. auxiliary steam frigate *Merrimac* as originally built and as reconstructed by the Confederacy into the C. S. ironclad ram *Virginia*. Two admirable working models of marine engines were built for the museum by the shipyard in 1934. During the summer of 1934 the museum collaborated with the Colonial National Historical Park at Yorktown in a salvage expedition to investigate the British vessels burned and sunk in the York River during the Revolution. In addition to these efforts, a policy of seeking and purchasing exhibits wherever they

might be found was adopted, and from the summer of 1933 until the beginning of World War II a field staff scoured the Atlantic seaboard, the Great Lakes, Lake Champlain, the Mississippi Valley, the West Indies, France, Italy and England, seeking not only readily portable museum objects but even full-size examples of small boats and canoes.

The results of this large-scale collecting both here and abroad are well summarized and liberally illustrated in the present volume. So far as is possible in the space available, Mr. Brown has described the ship models, actual small craft, relics, navigational instruments, ship equipment, armament and ornament, lighthouse and lifesaving equipment, whaling and fishing gear, ship portraits, shore views, sailors' handwork and personal belongings, ceramics, glassware, books and manuscripts that fill this vast institution. Although his approach is orderly, his book, like the museum that it describes, is confusing from its very complexity and extent. Consider, for example, the illustrations on pages 88 to 91. Here are reproduced (1) the early Ericsson screw propeller from the Great Lakes steamboat *Independence* of 1843, (2) a nineteenth-century circular table top decorated with scenes depicting the life of Columbus, (3) the purser's office window from the Fall River Line steamboat *Priscilla* of 1894, (4) a kit of instruments used by a French naval surgeon, and (5) a steam calliope from a Mississippi River showboat! Such a combination would have delighted the old-fashioned collector of 'artificial curiosities.' Indeed, it was an earlier version of such an assortment that caused Nathaniel Hawthorne in 1842 to satirize the museum of the Salem East India Marine Society in his story 'A Virtuoso's Collecting.'<sup>1</sup> The surprising thing is that it has all been collected from scratch in the past twenty years, during a period when museums in general are almost universally turning from the broad accumulation of the rare and curious to greater specialization within carefully defined limits.

The thoughtful reader of the present book, if he knows The Mariners' Museum at first hand, cannot fail to see the opportunities that have been lost by allowing the institution to 'just grow,' like Topsy. With a superb site available on the water, a storage building—tucked inland among the trees—was almost inadvertently adapted for exhibition. With all the facilities for producing a series of *uniform scale* ship models unrivalled in this country, the model shop was closed—apparently on grounds of expense—while the instructive effect of its products was seriously diminished by exhibiting them with other models of varying scales and quality. The machinery models, which offered such interesting possibilities of collaboration with the shipyard, have not been continued to their logical conclusion. Since the publication of M. V. Brewington's *Chesapeake Bay Log Canoes* in 1937 and *Chesapeake Bay Bugeyes* in 1939 little has been done to increase our knowledge of the craft of the area in which the museum is located. Indeed, since 1939 the museum's publications have consisted of exhibition catalogues and reprints from articles in various journals—including this one—with the single exception of Clifford W. Ashley's *Book of Knots*, where a financial subsidy assisted in commercial publication and caused a number of copies to bear the museum's imprint. The emphasis has been

<sup>1</sup> Readers of the NEPTUNE will recall the late Charles E. Goodspeed's amusing article, 'Nathaniel Hawthorne and the Museum of the East India Marine Society,' in V (1945), 266-285.

upon collecting *per se*, rather than upon increasing and disseminating knowledge, for the thousands of valuable objects owned by the institution are housed rather than exhibited. Size rather than content seems to have determined the location of many, and the labels are often far from adequate. The seeker after specific information is courteously received and richly rewarded for his visit. The casual tourist troops through from his bus and marvels at the extent and variety of the museum's holdings, yet nothing is done to interpret to him the place that the sea holds in the history of the United States and of the world. Objects alone will not speak. They must be selected, arranged and skilfully labelled—and it is far more difficult to write a good popular label than a learned article—if they are to convey their significance to any save the specialist.

'The culture of the sea and its tributaries, its conquest by man and its influence on civilization' is too vast a field for any institution—even as fortunate a one as The Mariners' Museum—unless limited by some thoughtful restriction of time and space. The sea occupies an extraordinarily large part of the globe's surface and man has been attempting to conquer it for several millenia. It would be equally valid to devote a museum to the culture of the land, its conquest by man and its influence on civilization. Then if, with complete freedom from any limiting historical or philosophical concepts, one set out to collect such rare and curious objects as might chance to be for sale in various countries, the result would be equally confusing. One might assemble, for example, a sleeping car of 1900 from the Trans-Siberian Railway, a scale model of Eli Whitney's cotton gin, casts of prehistoric flint implements from the Dordogne, a Vermont hen house, Queen Elizabeth's chamber pot, an assortment of ploughs, a few rails split by Abraham Lincoln, lithographs of the Alps, and heaven knows how many other remarkable exhibits. Yet in regard to the sea The Mariners' Museum has worked upon as catholic a diffusion of interests. Such a situation appears to have risen from the control of the museum by trustees who, while highly competent as shipbuilders, are extremely busy men without experience in museum administration, and who appear to be unaware that by wholesale and indiscriminate collecting they are building for themselves a juggernaut of problems similar to those from which older institutions have in recent years at least partially succeeded in freeing themselves.

It is not too late for the trustees of The Mariners' Museum to take the steps that would assure their institution the future place that, from its great advantages, it rightfully deserves. There is perhaps an applicable parable in the experience of the American Antiquarian Society. This organization, established in 1812, in Worcester, Massachusetts, by the patriot printer Isaiah Thomas, in emulation of the Society of Antiquaries of London, accumulated during the nineteenth century an extraordinary quantity of books and miscellaneous objects. It spread itself through many fields and was preëminent in none, until Clarence Saunders Brigham, who became its head some forty years ago, radically restricted its activities to the collection of American imprints before 1820, newspaper files and sources useful for the writing of American history. Objects that fell outside this field were rigidly eliminated, and with the resulting concentration of effort the American Antiquarian Society has achieved preëminence in the subjects of its choice. The Mariners' Museum could well use a Clarence Brigham.

LESTER J. CAPPON and STELLA F. DUFF, *Virginia Gazette Index, 1736-1780* (Williamsburg: Institute of Early American History and Culture, 1950). 2 volumes, 81½" x 11", cloth. ix + 1314 pages; 6 reels 35 mm. microfilm. \$75.00.

The eighteenth-century newspapers are beyond all question one of the greatest sources of American colonial history but unfortunately one of the most difficult to use, first because of the rarity of the files and second because bulk makes such a formidable task of searching for the grains of gold hidden in a gravel pit. The Institute of Early American History and Culture at Williamsburg has in the case of one of the most important papers solved both problems at least for the period while the *Virginia Gazettes* were published in Williamsburg. Every known issue from 1736 to 1780 of the various journals which used the same name has been reproduced in microfilm form. This is an achievement in itself although it has been equalled by similar microfilming of several other papers such as the *Pennsylvania Gazette*, the *Maryland Gazette*, etc. The film prepared by the Institute is clear and sharp with remarkably few illegible spots. A few issues are foreshortened due to the tight binding of the originals, but all the text can be read. In only one respect can fault be found in the plan of the work: its terminal date, the moving of the political capital of Virginia from Williamsburg to Richmond in 1780, is without other than local interest and leaves one of the most important periods of our history, the last years of the War for Independence, hanging in mid-air.

Of even greater importance than the microfilming (the splendid Brigham *Bibliography of American Newspapers* does enable one to find the files readily) is the indexing of each issue of the *Gazette*. It is no longer necessary now to search, search and search through news from Prague, Paris or Portsmouth or ads for strayed flea-bitten mares, runaway servants or goods for sale to discover the presence or absence of materials in one's field. The painstaking care, the astounding scholarship, and the superb organization which have been brought together in the making of the *Index* deserve the highest praise. A careful spot check of the entries of a maritime nature has not produced a single error of commission or omission.

Of course the *Index* was not aimed at any specific phase of historical research—every historian working with the eighteenth century will find it of value—but for those interested in maritime history it will prove to be the best sieve yet made for use in the gravel pit. For instance, are you interested in the humble river ferry, the movements and operations of the Royal Navy, or privateering? Do you wish to learn something of sailmaking, the use of slaves as ship carpenters, coopers or caulkers, the entry and clearance of the brig *So and So*, or perhaps if an ancestor really was hung for piracy? There are over six columns of entries on ferries and the entries from 'Ship blocks' through 'Shipyards' cover thirty-two three-column pages! A lot of vessels named *Nancy*, brigs, brigantines, schooners, ships, sloops, snows, receive a full column of entries and the British Navy about twenty-eight columns. And just because the ancestor was hung not at Williamsburg but on an island in Massachusetts Bay do not neglect the *Index*, for the printers of the *Virginia Gazettes* made their sheets as much an omnium-gatherum as our papers of today seem to be.

The only weakness in the project lies in its physical form. Such a distinguished piece of work deserves a format of comparable quality. It has received, however, only a mediocre job of design, and while strongly bound and clearly printed in no



way does the *Index* delight the eye. One might offer as an excuse that the book is purely a 'reference' work which will have hard usage. True, but Doctor Johnson's *Dictionary* and Diderot's *Encyclopedie* gave fine composition, presswork and binding along with utility. And housing for the microfilm reels (a field so far untouched by anyone save the cardboard carton maker) offered an opportunity to produce something better and more in keeping with the originals than a mere shipping container.

In compiling the *Index* a corps of personnel has been recruited and trained, a smoothly functioning organization has been created and a vast amount of experience of great value has been accumulated. Should all this disappear completely, the *Virginia Gazette Index* would be a more than adequate passport into Valhalla. But let it be hoped the organization and experience will not be lost by turning to other fields. Let it also be hoped that by the preparation of similar indices the other colonies will be brought back into equality with Virginia.

EDWIN D. LEROY, *The Delaware and Hudson Canal: A History* (Honesdale, Pennsylvania: Wayne County Historical Society, 1950). 5½" x 8½", cloth. 96 pages, numerous illustrations, plans and facsimiles. \$2.00. With supplementary maps, 17" x 22", \$2.50.

Honesdale, Pennsylvania, named for the perspicacious diarist Philip Hone (1780-1851), mayor of New York and promoter of useful works, was the shipping point and center of the Delaware and Hudson Canal and Gravity Railroad which came into being for the express purpose of conveying Pennsylvania 'stone coal' eastward to New York markets. The 108-mile canal which extended from the Hudson River at Kingston, New York, was first opened in 1828 and survived as late as 1898 when coal shipping by rail from the Lackawaxen and other mines permanently knocked it out of business. Being almost exclusively a coal canal, the D. & H. never attained the romantic stature of the Erie and other better known artificial waterways. But in its hey-day the Canal Company's fleet, according to an 1880 summary, included '915 canal boats [mule drawn], 66 transfer boats, 3 freight line boats, 16 barges, 2 wrecking boats, 1 propeller boat and 1 dredging machine.' An inestimable number of privately owned boats also used the canal.

It is difficult to appreciate the size and complexity of operation of the large number of commercial canal systems which formerly flourished in the eastern United States. They have completely vanished from the scene and beyond a few tumble-down locks here and there along the banks of our polluted industrial rivers, no vestige of them remains in American life. In this day of steam and steel the naval officer and the yachtsman contrive to keep alive (frequently by transfusion) some of the virile language of the sea as it was in the days of wood and canvas. But the lingo of the canaler passed on for good with the last 'whoa' to the last tired mule and few persons today could identify such things as 'berm banks,' 'waste weirs,' 'paddle gates,' 'balance beams,' 'snubbing posts,' 'hipped boats,' and 'flickers.'

The Wayne County Historical Society is to be congratulated, therefore, for its worthwhile effort in presenting this small but worthy chapter of past American enterprise. Mr. LeRoy's maps, diagrams, and exceptionally neat mechanical drawings (viz. 'Isometric view of Lower Lock Gate Machinery . . .') are obviously labors of



very great love and all in all the production is highly satisfactory. By recourse to offset printing, it has been possible to shove in along with the text any quantity of illustrations and facsimiles of such documents and broadsides as the 1882 'Rules for the Government of Lock Tenders,' and many others. The two supplementary maps are well worth the extra fifty cents.

JAMES A. GIBBS, JR., *Pacific Graveyard; a narrative of the ships lost where the Columbia River meets the Pacific Ocean* (Portland, Oregon: Binfords and Mort, Publishers, Oregon Historical Society, 1950). 5½" x 8¾", cloth. [viii] + 173 pages, 25 illustrations. \$3.00.

In the text of this book, James A. Gibbs, Jr., describes fifty-one wrecks which have taken place in the general vicinity of the mouth of the Columbia River between 1829 and 1947. He has arranged these generally on the basis of the major factor responsible—sand in the shifting shoals of the Columbia River Bar, storm, fog, fire, collision, and explosion. In addition to the wreck stories, the book contains some information on the physical characteristics of the coastline, the visits of explorers, surveys, life saving facilities, jetties, lighthouses, lightships, vessels salvaged from the sands and rocks of the region, mysterious disappearances and losses, and vessels carried involuntarily across the Pacific by the Japan Current.

An appendix lists 146 wrecks and gives details on those not described in the text preceding. This includes losses down to 1950. All but one of the illustrations are photographs of the coastline or of the wrecks described. A chart or sketch map of the region covered by the book would have been a useful addition.

The author is a journalist, Assistant Editor of the *Marine Digest* of Seattle, and an active member of the Puget Sound Maritime Historical Society. He knows the Oregon and Washington coasts at first hand, and during a World War II tour of duty in the Coast Guard he was a lighthouse keeper at Tillamook Head, Oregon.

Primarily a series of narratives rather loosely organized, there is no reason to believe that the book is intended to represent exhaustive research. Mr. Gibbs has, however, based it upon some newspapers and official records as well as reliable secondary accounts and conversations with seafaring men. Writing is discursive, and it is not hard to find minor errors and misleading broad generalizations at some points. Although not without fault, this is an entertaining, useful, and generally reliable little book.

HUMPHERY BARTON, *Westward Crossing* (New York: W. W. Norton & Company, 1951). 6" x 9", cloth. x + 209 pages, 15 text figures. \$3.50.

Any 'stick and string' sailor starting this book will find it difficult to lay aside. Motorboat men will learn what can be done without power. Those who venture on deep water, or aspire to do so, will find much valuable information and many useful wrinkles in rigging and interior design of small cruising craft. The armchair pilots and navigators can enjoy a well-written, straightforward tale of adventure. The only disappointed readers will be those who expect some bedroom atmosphere. It is the story of how two good sailormen made an Atlantic voyage from England to New York in a twenty-five footer and of the calms and storms encountered en route. Mr. Barton launches his tale with a statement of motive and an account of

fitting out and procuring a crew. He carries on with an entertaining journal of events as they occur, gives his conclusions based upon the experience, then tops off with a daily summary of events and an analysis of the voyage. This book also bears out the old belief that somewhere on the waters of the earth is one wave lying in wait for the opportunity to climb aboard and undo all one's careful planning and handling. Fortunately, Mr. Barton's wave cost him only the seat of his trousers and a little skin rather than his and his companion's life. Track charts showing daily positions and winds encountered form the front and back cover pages. Fifteen text illustrations show details of rigging and accommodations.

RANDALL V. MILLS, *Railroads Down the Valleys: Some Short Lines of the Oregon Country* (Palo Alto, California: Pacific Books, 1950). 5¾" x 9½", cloth. x + 151 pages, frontispiece, 30 illustrations, end paper maps. \$3.50.

This book is an excellent companion volume to *Stern Wheelers up the Columbia* written by Mr. Mills in 1947 and reviewed in the NEPTUNE for April 1948. The background is the same Oregon country with its many rivers and fertile valleys, its grain lands and wealth of timber. It is primarily the story of five little railroads but Mr. Mills shows very effectively the dependence of some of these lines on proper connections and coöperation with the river and coastal steamers which carried the freight to the final markets. The little *Walla Walla & Columbia River Railroad* was given preferential treatment by the *Oregon Steam Navigation Company* steamers, thus effectively blocking the competition given the railroad by the freight wagons of the time. The *Oregon Pacific Railroad* actually owned several steamers on the Willamette River as well as some larger vessels plying between its terminal at Yaquina Bay and San Francisco.

There are appendices listing the full history of each locomotive and steamer, a bibliography, and index. The useful maps on the inside covers show the exact location of each little railroad, and its position relative to the river valleys, river ports, and the nearest trunk line railroads. The stories are told in the same colorful and breezy style used by Mr. Mills in his earlier book.

CYRUS TOWNSEND BRADY, JR., *Commerce and conquest in East Africa with particular reference to the Salem trade with Zanzibar* (Salem: Essex Institute, 1950). 5¼" x 8", cloth. xxi + 245 pages, 19 illustrations, end-paper maps. \$3.50.

The later days of Salem shipping are full of mysterious names and references to Zanzibar and East Africa that most people accept without beginning to understand. In the Peabody Museum, for example, one sees the portrait of a bearded monarch, Seyyid Said bin Sultan, ruler of Muscat and Zanzibar, and the elegant uniform worn (with obvious discomfort) by a Salem consul at Zanzibar. The explanation of these relations is one of the purposes of an unusual and readable book published by the Essex Institute. *Commerce and conquest in East Africa* is anything but a piece of local antiquarianism, for Cyrus Townsend Brady, Jr., is a traveller and a man of action rather than a closet scholar. Having found his way to Africa, in the course of a career that has kept him abroad in several continents for most of his active life, he became intrigued with the tangled history of East Africa, and dis-

covered from that end the part that American ships, merchants and consuls had played during the nineteenth century. Coming to New England he pursued the story of Salem trade with Zanzibar from the sources in the Essex Institute and the Peabody Museum. The result is this pleasant and original book, obviously written by an intelligent traveller, that will do much to explain the complicated pattern of East African history to those who know little of it.

GREVILLE BATHE, *Ship of Destiny. A Record of the U. S. Steam Frigate Merrimac 1855-1862*. With an Appendix on the Development of the U. S. Naval Cannon from 1812-1865 (St. Augustine, Florida: The Author, 1951). 9" x 11", cloth. 82 pages, 18 plates. \$5.00.

The short engagement of *Merrimac* with *Monitor* has assumed such proportions in naval history that the previous career of the former vessel before her reconstruction by the South has been largely overlooked. *Merrimac* was built in the transition period from sail to steam and as a result was an experiment from the time her keel was laid until she was burned by her own crew. The author, an engineer by profession, gives an engineering account of the vessel with considerable details of her engines and their performance. Collecting his information from many sources, he has contrived an excellent, concise history of this vessel that caused so many changes in the navies of the world. The illustrations are excellent, comprising folding plans of the engines and pictures drawn largely from contemporary sources.

A dividend is given in the form of an appendix on the development and construction of smooth bore cannon from 1812 to 1865. A description of both the Rodman and Dahlgren guns is given with considerable data on the many improvements made during the period of their use. Here again there are many fine illustrations accompanying the text. It is to be hoped that this book will inspire more such studies of important vessels.

FRANCES DIANE ROBOTTI, *Whaling and Old Salem, a chronicle of the sea, with an account of the seal fisheries, excerpts from whaling logs and whaling statistics* (Salem: Newcomb and Gauss Company [distributed by Oliver Durell, Inc., 257 Fifth Avenue, New York City], 1950). 6" x 9", cloth. xvi + 192 pages, 33 illustrations. \$3.50.

New England ports always had their characteristic maritime trades that they pursued without too much regard for the habits of their neighbors. Thus Boston, Salem, Marblehead and Gloucester, although within a few miles of each other, each followed distinct commercial patterns. Salem has never been considered a whaling port of the first order, even though there were some eighty whaling voyages out of Salem between 1799 and 1867. In spite of the amount that has been published about Salem history, Mrs. Robotti seems to have an unconquerable determination to write more. Having completed her *Chronicles of Old Salem*, she lighted upon Salem whaling as a neglected field and attacked it with energy. Although she has published some useful extracts from whaling logs and assembled a great deal of material—relevant and otherwise—her book is for the whaling enthusiast rather than for the serious student of Salem trade. Moreover, she has digested this mass of information about as thoroughly as the whale digested Jonah.

The Mariners' Museum, *American Merchant Sailing Vessels of the Nineteenth Century together with Ship Models, Chinaware and Related Material* (Newport News, The Mariners' Museum, 1951). 6" x 9", paper covers. 27 pages, 8 illustrations, index. 75 cents.

Publication No. 22 of The Mariners' Museum is a catalogue of an exhibit of material relating to American sailing vessels and lists 61 paintings, 8 models, and 14 Liverpool pitchers. A concise history of each vessel represented is given but unfortunately a bibliography of sources is not included. The material presents an excellent survey of the vessels in our foreign commerce during the last century.

LAWRENCE C. WROTH, *The John Carter Brown Library: Annual Report 1949-1950* (Providence, 1950). 5" x 7 $\frac{3}{4}$ ", paper. 78 pages. Free.

Mr. Wroth's delightful reports of this distinguished library always contain some information of interest to the maritime historian. This year is no exception and on pages 57 to 62 he describes several rare works added to their collection of Pacific voyages as well as two rare seventeenth-century Spanish books on navigation which particularly relate to American waters.

ERNEST S. DODGE, *Peabody Museum of Salem: Report of the Director 1950* (Salem, 1951). 5 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ ", paper. 26 pages. Free.

The first of a new series of printed annual reports for this venerable institution. The last printed report appeared in 1889. There were 843 maritime accessions during the year including numerous manuscripts, log books, photographs, and paintings. The most interesting and important item is an oil painting by Joseph Roux of Marseilles showing part of the action between H.M.S. *Serapis* and John Paul Jones' *Bon Homme Richard*.

*First View of the Battle of Patapsco Neck*. Colored engraving on copper published by Andrew Dubuc, 1814. 18 $\frac{1}{2}$ " x 24 $\frac{1}{2}$ ".

*View of the Bombardment of Fort McHenry*. Colored aquatint published by J. Bower, 1816. 18 $\frac{1}{2}$ " x 24 $\frac{1}{2}$ ".

The Peale Museum, Baltimore, has recently published hand-colored collotype facsimiles of two of the rarest of War of 1812 prints from originals in the Hambleton Collection. These scenes depict the successful defense of the city of Baltimore by land and by sea from British attack. The presswork by the Meriden Gravure Company and the coloring are excellent, reproducing not only the lines and tints but also preserving much of the flavor of the originals. The prints are priced at \$7.00 each or \$13.00 a pair unframed. A circular describing the prints in detail may be obtained from the Museum.

U. S. COAST GUARD PUBLIC INFORMATION DIVISION. *United States Coast Guard Bibliography* (Washington: U. S. Government Printing Office, 1950). 6" x 9", paper covers. 29 pages.

A non-technical bibliography of books and articles dealing with the United States Coast Guard and its parent organizations the Revenue Cutter Service and the Life-Saving Service, to which were later added the Bureaus of Lighthouses and Marine Inspection.